



AGENDA
Committee on Public Safety
Friday, February 12, 2016 @ 3:30 p.m.
City Council Conference Room, 10th Floor
UPDATED 2/9/2016 p.m.

Councilmember Carol Wood, Chair
Councilmember Adam Hussain, Vice Chair
Councilmember Kathie Dunbar, Member

1. **Call to Order**
2. **Roll Call**
3. **Minutes**
 - January 22, 2016
4. **Public Comment on Agenda Items**
5. **Discussion/Action:**
 - A.) Update from Board of Police Commission on Citizen Investigator Position
 - B.) Discussion on the Medical Marijuana Ordinance with the City Attorney's Office
 - C.) Discussion on 3200 South Washington (Patricia Baines-Lake & Tony Baltimore)
6. **Pending**
 - Update – Community Police Officers
7. **Other**
8. **Adjourn**

COMMITTEE on Public SafetyDATE 2/12/16

Please print

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KATHY MILES			RSL	



COMMITTEE

on Public SafetyDATE 2/12/16

Please print

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COMMITTEE on Public Safety

DATE 2/12/16

Please print

NAME	ADDRESS	EMAIL	Representing	PHONE
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<i>Steve Gleen</i>				
<i>DAVID WOMBOLDT</i>	<i>4815 TRESSA</i>			
<i>RICHARD C. PRITCHARD</i>	<i>PO BOX 12004 Lansing, MI 48901</i>			
<i>Rex Smith</i>	<i>2302 Concord Rd</i>	<i>—</i>	<i>—</i>	<i>—</i>
<i>Kevin PYBUS</i>	<i>P.O. Box 161 Howell, MI 48844</i>	<i>PYBUS1@Yahoo.com</i>		
<i>Patricia AB lace</i>		<i>—</i>	<i>—</i>	<i>—</i>
<i>Zerry Harshman</i>	<i>616 E. Holmes Lansing</i>			
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MINUTES
Committee on Public Safety
February 12, 2016 @ 3:30 p.m.
Tenth Floor, City Council Chambers – Lansing City Hall

CALL TO ORDER

The meeting called to order at 3:31 p.m.

ROLL CALL

Councilmember Carol Wood, Chair

Councilmember Adam Hussain, Vice Chair

Councilmember Kathie Dunbar, Member – arrived at 3:46 p.m.; left at 5:11 p.m.

OTHERS PRESENT

Patricia Spitzley, City Council Member At-Large

Joseph Abood, Deputy City Attorney

Patricia Baines-Lake, Lansing Housing Commission Director

Tony Baltimore – Lansing Housing Commission Chair

Lt. Ryan Cressman, Lansing Police Department

Brian Hamilton, Puff-n-Stuff

Shirley Purdy

Stephen Purdy

Cinda Eltzreth

Mark Bessak, Got Meds Medical Marijuana Distributor

Kevin McKinney

Robin Schneider, NRRRA

Douglas Mains, NRRRA

Deland Glosson

Ruby Abrego

Edge Russel

Jackie Moss

Spencer Soka

Adrian Joseph

Carolyn Condell

Steve Green

David Womboldt

Richard C. Pritchard

Rex Smith

Kevin Pybus

Patricia Ablace

Terry Harshman

Noel Harshman

Matt Hoffman, Michigan Medical Marijuana Growers Association
Joanna Creede
Mike Tobras
Joshua Covert
Michelle Covert
Suzanne Elms-Barclay
Erin Fox
Deb Parrish
Jim Papesch
Shaun Watson
Monica Watson
Michael Sdao
Jeff Nemeth
Marry Ann Prince
Paul Clark
Kathy Miles
James Barr
Nakia Barr
Laurie Ruiz
Paul Samways
Jeffrey Hank, MILEgalize
Chris Silva, MILEgalize
Maureen Smith, Ingham Substance Abuse Prevention Coalition
Courtney Vincent, Administrative Assistant

Minutes

MOTION BY COUNCIL MEMBER HUSSAIN TO APPROVE THE MINUTES FROM JANUARY 20, 2016 AS PRESENTED. MOTION CARRIED 2-0.

Public Comment on Agenda Items

Councilmember Wood stated that public comment would be taken prior to the discussion of each agenda item.

Councilmember Wood moved the discussion on 3200 S. Washington on the agenda before the discussion on the medical marijuana ordinance.

Discussion/Action:

Update from Board of Police Commission on Citizen Investigator Position

Councilmember Wood stated that it was her understanding from the Chair of the Board of Police Commission that the City would contract with Mr. Brandley, the Citizen Investigator while the Commission went through the hiring process.

Discussion on 3200 South Washington

Councilmember Wood opened the floor for public comment.

Ms. Marry Ann Prince, a resident of South Lansing, addressed the Committee to discuss the problems she had heard the building faced such as insect and rodent infestation and crime. She hoped that there was something that could be done to improve conditions.

Mr. Richard Pritchard, a former resident of 3200 S. Washington, addressed the Committee to discuss some of the issues he faced while living there including having his complaints ignored by building management and the Lansing Housing Commission. He stated that no one

seemed to care about the low income residents living in the building or the problems they are having.

There was no other public comment.

Councilmember Hussain stated that he had been following the status of this property since 2012 when he was made aware of the problems during a news report about an attempted robber and attempted murder on the property that resulted in a car crash. The issues raised in that report continued to affect the property in 2013 and 2014. He remarked that he had thought the problems had been taken care of because he had not heard anything after 2014, but had recently been notified by someone of the continuing problems such as drug issues, lack of security, bed bugs, and aggressive crowds. He went to 3200 S. Washington about two weeks ago and was able to gain entry. He walked through the entire property including some of the apartments, and witnessed such problems as security doors being unlocked, litter in the hallways and stairwells, unkempt grounds, parties in the common areas, and insect infestations. He noted that he spoke with Mr. Tony Baltimore, the Chair for the Board of LHC regarding some of the issues he had seen during his visit to the property. He then explained that he had asked for an update on the property because he had been informed that there was supposed to be a collaborative effort between the Lansing Police Department (LPD) and the Lansing Housing Commission (LHC) to address these ongoing issues, and he wanted to know what steps were being taken to mitigate and/or remedy the problems at 3200 S. Washington.

Councilmember Wood introduced Ms. Patricia Baines-Lake, Director of the LHC. She then reviewed that the Old Everett Neighborhood Association had met with the LHC in 2012 with their concerns, and at that time the LPD had provided a Community Police Officer for that area. There had been several raids and evictions on the property since then, and that the Neighborhood Association had submitted an action plan for the LHC to look at and adopt.

Ms. Baines-Lake began by addressing the after-hours parties, stating that they were aware of this issue as well as which floors seemed to be most prevalent. They have had a dialogue with LPD about doing "the walks, the knocks, the talks," and for the LHC to pay for baseline services to have this done on a quarterly or semi-annual basis. They are aware of the complaints regarding aggressive behavior on the property, and they have evicted a number of people associated with that behavior.

She did note that prospective tenants are screened before moving in and that tenants will be evicted if a problem later occurs. She added that it would help if there were more witnesses to the activities and more people willing to talk to the police. She mentioned that there had been a Community Police Officer, which had helped with addressing aggressive behavior issues, and that the greatest need for an officer's presence was during non-business hours. Other methods LHC is using to mitigate problems include meeting with current tenants and having new-tenant orientations. She stressed the importance of a partnership between LHC, LPD, and the residents in order to succeed.

Ms. Baines-Lake noted that there are currently six or seven residents who are responsible for helping to maintain and clean the building during off hours, but that it is difficult to keep up with cleaning when there are residents who do not care about cleanliness. In regards to security, they had previously been allowed to use U.S. Department of Housing and Urban Development (HUD) funds towards afterhours security personnel, but those funds are no longer allowed to be used in that manner. They can be used to pay for hardware, and additional cameras will be purchased using those funds.

Councilmember Dunbar arrived at 3:45 p.m.

Mr. Baltimore emphasized that he always encourages residents to come to the LHC Board meetings with problems they are having, and that they will try to address those issues. He noted that they did not receive enough federal funding to take care of all that needed to be done, and also pointed out that the property is an older building with corresponding maintenance problems. He remarked that he had recently spent two hours talking to the management of 3200 S. Washington, as well as walking the property, and that while he was there he did see trash in the hallways, outside of doors, and in the rooms with trash chutes. He encouraged residents to be mindful of their trash. He then discussed the bedbug problem, stating that they address the problems as residents report them, and that there was no cost to residents to have their homes treated for bedbugs. They try to do as little displacement as possible and also try to educate residents on bedbugs and ways they can decrease the risk of infestation. He mentioned their ongoing relationship with LPD has been great, and that they provided LPD with key cards to the building so they would have immediate access when responding to a complaint inside. He wanted to see the LHC, building management, and residents work together to help resolve the issues in the building.

Councilmember Wood asked for clarification regarding any fees to residents for bedbug services. Ms. Baines-Lake replied that there was no charge to residents for treatment with the exception of a non-compliance fee in situations where the exterminator is repeatedly being rescheduled on a unit at the time of scheduled service because of a tenant's non-compliance with preparing the unit for the treatment.

Councilmember Wood asked whether those found non-compliant were seniors or disabled and if there were any services available to assist them in preparing their apartments should they be unable to do so themselves. Ms. Baines-Lake replied that it was the responsibility of the tenant to prepare the apartment for the exterminator. They can accommodate if a tenant calls the office and requests for additional time before the exterminator arrives, and if the tenant has someone listed on their record that can be called to assist the tenant then the office will call that person for assistance. Otherwise, it is the responsibility of the tenant to make arrangements for assistance. Councilmember Wood suggested that LHC could contact agencies such as the Tri-County Office on Aging to inquire about services to assist those unable to prepare their units on their own.

Councilmember Hussain asked if surrounding units were inspected after a unit was treated for bedbugs. Ms. Baines-Lake replied that depending on the severity of the infestation they would have the units above, below, to the right, and to the left of the treated unit inspected. She gave a handout to the Committee on bedbugs. Different inspection methods were performed including having canine go through units in the entire building annually, visual inspections by management in response to complaints submitted by residents, and visual inspections by their pest control contractor. They also worked to educate residents in an effort to prevent them from bringing bedbugs into the building from an outside source. Units are treated with chemical if it is a mild infestation and with heat if it is a bad infestation. She noted that LHC is in the process of purchasing a heat machine as a way to curb costs, explaining that it was about \$200 per chemical treatment and between \$1,200 and \$1,800 per heat treatment. She added that chemical treatment requires less preparation by the tenant than heat, which necessitates such measures as bagging up all clothes and taking them to a laundromat to be heated in industrial driers to the necessary temperature to kill the bugs.

Councilmember Wood asked if any assistance was offered for the costs of preparative measures such as taking clothes to the laundromat. Ms. Baines-Lake replied that they are providing residents with the plastic bags for their clothes, and that they will provide refunds for the costs of laundering if a resident provides them with receipts. She noted that they are

trying to arrange for the laundromats to bill them for the related costs, up to a set cap, but so far no laundromats have been willing to do that.

Councilmember Wood asked how the common areas were treated to prevent further infestation. Ms. Baines-Lake explained that those areas receive a visual inspection monthly and, regardless of the outcome of the visual inspection, are also treated with chemicals monthly.

Councilmember Dunbar asked if there were laundry services available on site. Ms. Baines-Lake replied that they did have washers and driers on site but the ones at a laundromat were larger. Councilmember Dunbar suggested they consider buying an industrial dryer to assist with the heating of clothing for residents because it might be more cost effective than reimbursing the costs of a laundromat. Ms. Baines-Lake replied that their washers and driers were supplied by a third party, but that they would talk to them about that option.

Councilmember Spitzley asked if the apartment units could be treated on a regular basis such as the common areas were. Ms. Baines-Lake replied that the treatments on the common areas were preventative in nature and that they were following the recommendation for treatments from their pest control contractor.

Councilmember Wood asked Lt. Cressman for an update on the status of any partnership between LPD and the LHC. Lt. Cressman replied that LPD did partner with LHC, and that working with residents and keeping residents safe was something LPD took very seriously. He noted that their resources were limited at this time, and that the community officer position for that area was currently vacant, but the intention was to fill it as soon as they made more hires in the department. He discussed the LPD's efforts to focus on crime "hot spots" using Data-Driven Approaches to Crime and Traffic Safety (DDACTS), mentioning that one such hot spot was MLK Jr. Blvd. and Holmes Rd. He noted that DDACTS zone had been effective in that area and they were looking into possibly moving their DDACTS zone back into that area shortly. He stated that there were 211 calls to the 3200 S. Washington property in 2015, explaining that that was not an extraordinary amount and it did not show up on their crime hot spot mapping during analysis of crime in the City of Lansing. He also mentioned that there are currently issues with drugs being sold on the property and they are working with the appropriate agencies to gather enough evidence for an eviction.

Councilmember Wood mentioned that there had been an action plan created by the Old Everett Neighborhood Association, and that she would email a copy to Lt. Cressman. She asked Lt. Cressman to review the action plan and then return with an update of what has been completed, can be completed, or might not be feasible, as well as with a timeline regarding filling the community officer position for that area. She asked whether letters were being sent to the LHC to keep them apprised of the City's ordinance on drug houses. She added that she would like to follow up with the LHC regarding what agencies they could be partnered with, especially regarding assistance for senior and disabled residents for bedbugs, and that she would like to schedule Ms. Baines-Lake and Mr. Baltimore to return to the Committee for further updates.

Councilmember Hussain commented that one common issue brought to his attention was that residents felt as if they were not being heard. He reiterated the security problems with the building. He also remarked that the best method for dealing with bedbugs was early detection and aggressive treatment, opining that annual inspections were insufficient to fix the problem. He suggested that monthly inspections be performed now and that they could be scaled back to quarterly once the problem was under control. He added that he had seen bedbugs in some apartments during his walkthrough, and that having infestations on the fourth and fifth

floors of the building indicated that the problem was most likely widespread through the entire building. He said that the residents deserve to live in a safe, clean environment.

Councilmember Wood asked Lt. Cressman, that a neighborhood watch program be started in the building once a community officer was assigned.

Mr. Steve Green, a resident on South Washington Ave., addressed the Committee to mention that some of the visitors to 3200 S. Washington have also caused problems in the neighborhood at large. He asked about the City's ordinance regarding drug houses and how it would apply to a large apartment building. Councilmember Wood explained that he was referring to the ordinance on drugs and prostitution and outlined the provisions of the ordinance required for the City Council to move forward regarding a complaint. She also noted that the Old Everett Neighborhood Association was aware that the problem spreads past this property, which was why the action plan had been drafted.

Mr. Baltimore reiterated that residents could come to the LHC and the LHC Board with their concerns, mentioning that he had told Councilmember Hussain that he would be willing to go to the property to meet with residents, and he thanked the Committee for bringing this issue to their attention.

Discussion on Medical Marijuana Ordinance

Councilmember Wood stated that the Committee would be discussing the current medical marijuana ordinance and whether they were able to begin enforcing the ordinance and issue licenses again. If the City Attorney believed the ordinance was not enforceable, then they would work with the City Attorney's Office to create an ordinance that is enforceable.

Councilmember Wood opened the floor for public comment.

Ms. Deb Parrish addressed the Committee in support of regulating medical marijuana establishments through the ordinance by requiring they be licensed, provide a security plan and floor plan, and go through both background checks and zoning checks.

Mr. Jeffrey Hank, Founder of the Coalition for a Safer Lansing and Executive Director of MILegalize, addressed the Committee in favor of licensure and regulation for medical marijuana establishments. He suggested that the City treat dispensaries as they would a normal business, not limit the number of licenses, allow them in business districts, and have regulations in place to prevent safety issues. He also suggested including a provision in the ordinance for those who process marijuana products.

Mr. Steve Green, a resident of Lansing and writer of a medical marijuana review column for the Lansing City Pulse called "The Green Report," offered his assistance to the Committee in regards to the ordinance and mentioned that there might be some conflicts with the language of the current ordinance. He spoke in favor of licensing and regulation.

Councilmember Wood reiterated that there is a current ordinance in place and that the City is precluded at this time from issuing licenses.

Ms. Kathy Miles addressed the Committee in support of regulation and licensure for dispensaries. She submitted the transcript of her speech to the Committee.

Ms. Noel Harshman, a resident of South Lansing, addressed the Committee in favor of issuing licenses for medical marijuana dispensaries.

Ms. Suzanne Elms-Barclay, a resident of Lansing, addressed the Committee regarding misuse of medical marijuana, the ease of obtaining a medical marijuana card for use prescribed by a doctor, and a problem with dispensaries adequately checking a patient's information before distributing the marijuana. She supported enforcement of the current ordinance, and submitted information on medical marijuana for the Committee. Councilmember Wood explained that the majority of what Ms. Elms-Barclay had mentioned were issues handled by the State of Michigan, not the City of Lansing.

Mr. Mark Bessak, a resident of South Lansing, addressed the Committee in favor of enforcing the ordinance. He suggested having a provision to cover the testing of medical marijuana for pesticides and for the Committee to consider those people who were waiting for licenses to open their businesses as opposed to only giving licenses to those already in business.

Ms. Michelle Covert addressed the Committee and asked that they not limit the number of licenses allowed for dispensaries out of concern that there would be a lack of variety of medical marijuana strains, limiting resources for those who needed less-common varieties for their ailments. She also supported regulating the testing of marijuana sold at dispensaries.

Mr. Terry Harshman, a resident of South Lansing, addressed the Committee in support of regulation and enforcing the ordinance.

A woman who wished to remain anonymous addressed the Committee as an advocate for the benefits of medical marijuana for those who need it.

Ms. Cinda Eltzreth, a resident of Lansing, addressed the Committee in opposition to medical marijuana lounges because they allowed smoking of marijuana on their premises.

Mr. Chris Silva, Campaign Manager for MILEgalize, addressed the Committee in opposition to setting a cap on the number of licenses that would be issued by the City out of concern that there would be a lack of variety in medical marijuana strains available.

Mr. Matt Hoffman, a resident of Grand Rapids and board member of the Michigan Medical Marijuana Growers Association, addressed the Committee to thank them for having the discussion about medical marijuana dispensaries.

Mr. Jeff Nemeth, a resident of Lansing and owner of ACT Laboratories, addressed the Committee to ask that they consider licenses for those who test medical marijuana and offered his assistance regarding regulations for medical marijuana testing.

Ms. Edge Russell, a resident of Lansing and medical marijuana grower, addressed the Committee to suggest that they not penalize those people who were waiting to open dispensaries until there was regulation and licensure in place, in part to help ensure there is a full variety of strains available to those who need them.

Ms. Robin Schneider, representing the National Patients' Rights Association, addressed the Committee to caution against using zoning as a tool to cut back on the number of dispensaries in the city because they might not be the best options for patient care despite their location. She mentioned that patients would be displaced if the number of dispensaries decreased, and she suggested that they make sure that the facilities that do remain open are licensed and have the ability to provide the best care for the patients.

Mr. Doug Mains, attorney with Dykema Gossett Law Firm and representing the National Patients' Rights Association, addressed the Committee in favor of regulation for medical

marijuana dispensaries. He mentioned some of the problems the City of Detroit had been dealing with concerning their medical marijuana ordinances including complex zoning requirements. He asked the Committee to find a balance between public safety, the rights of patients, and concerns of the neighborhoods.

Councilmember Dunbar left the meeting at 5:11 p.m.

Mr. Paul Samways, Managing Partner and CPA of Cannabis Tax Advisors, addressed the Committee stating the advantages to having dispensaries such as the various taxes that owners, operators, employees, and customers of dispensaries would pay as well as reducing blight by utilizing vacant buildings. He suggested that it was within the city's ability to address the community concerns, professionalize the industry, and provide patients with what they need.

Mr. Erin Fox, a resident of Lansing, addressed the Committee in opposition to limiting the number of dispensaries due to the possibility of creating a non-competitive market, which could increase the cost of medical marijuana to patients. He supported regulation but asked the Committee to consider the effects of their decisions on the costs to patients.

Mr. Brian Hamilton, representing Puff-n-Stuff, addressed the Committee in support of regulations and licensing for medical marijuana testing and dispensaries, and suggested that zoning regulations for dispensaries could mirror those for bars.

Mr. David Womboldt, a resident of Lansing and member of Rejuvenating South Lansing, addressed the Committee to suggest that any regulations put in place for medical marijuana dispensaries should consider the rights of non-users.

Mr. Mike Barron, representing Got Meds, addressed the Committee in support of medical marijuana lounges for those patients who were unable to use their medical marijuana in their homes and in support of regulation for medical marijuana dispensaries.

Mr. Spencer Soka addressed the Committee in support of regulations for medical marijuana dispensaries.

Councilmember Wood closed the public comment and reserved comment to the Committee.

Councilmember Wood stated that the current ordinance and resolution concerning medical marijuana required a fee and limited the number of licenses allowed. She asked Mr. Abood if this was an enforceable ordinance and if they could begin to issue licenses again.

Mr. Abood replied that medical marijuana cultivation centers, provisioning centers, and dispensaries were not legal under the law in the State of Michigan and that the City had issued a moratorium on licenses for medical marijuana dispensaries because there was no legal basis for issuing licenses. He noted that there are municipalities drafting ordinances where they are going to issue licenses and that the state legislature is working on MMMA Dispensary Cultivation Center Tracking Ordinances, but there was no timetable for completion. He also mentioned that the City Attorney's Office has been working to draft an equitable ordinance that will keep with what the state and community needs while being mindful of the medical needs of the patients. He explained that they had concerns about enacting an ordinance only to repeal it should there be a conflict with what the legislature may soon pass. There were provisions of the current ordinance that can be enforced now such as zoning rules and special requirements.

Councilmember Wood asked for clarification as to whether the city could start issuing licenses immediately under the current ordinance. Mr. Abood replied that issuing licenses would not be in compliance with state law, and therefore the immunities granted by state law would neither extend to nor legitimize dispensaries. He added that there was also the risk of the opinion of the Attorney General or the legislature changing after the election in November, which could also pose a risk. He said that they could issue licenses, but the issue was whether they would be meaningful under the law.

Councilmember Wood summarized that the general opinion appeared to be in support of licensing for dispensaries, and the City Council wanted to get to the point where they could do that. She said she was not willing to wait to find out what the state was going to do when there was no guarantee they would act any time soon. Doing nothing is not the answer.

Councilmember Spitzley expressed her support of regulation for medical marijuana dispensaries and asked for the City Attorney's Office to provide the City Council with options and examples from other municipalities to see how they were enacting their ordinances.

Councilmember Hussain addressed a previous comment regarding the use of zoning to reduce the number of dispensaries, clarifying that zoning regulations were a standard part of urban planning. He then reported that the majority of the city residents he had heard from were in support of regulation, and that it seemed those who were against regulations and opposed setting a cap on the number of licenses did not live in Lansing. He stated that they were there to represent the residents of the City of Lansing and that it was not their responsibility to provide others with medical marijuana. He agreed that they could not afford to continue to wait on legislature to address the issue, and said that he supported enforcing the current ordinance. He opined that 48 dispensaries was too many for the city and supported setting the cap at a lower number.

Councilmember Wood asked Mr. Abood if he could return at the next Committee on Public Safety meeting scheduled for February 26th, and provide the Committee with suggestions on how to move forward. Mr. Abood replied that he would. Councilmember Wood stated that the next meeting would be held in City Council Chambers to accommodate the large number of attendees.

OTHER

Councilmember Wood stated that they would readdress 3200 S. Washington in March. She added that an invitation would be extended to the Chief of the Lansing Police Department to attend the meeting on February 26th to discuss community police officers.

ADJOURN

The meeting was adjourned at 5:45 p.m.

Submitted by,

Courtney Vincent, Administrative Assistant

Lansing City Council

Approved: March 11, 2016



MINUTES
Committee on Public Safety
January 22, 2016 @ 3:30 p.m.
Tenth Floor Conference Room – Lansing City Hall

CALL TO ORDER

The meeting called to order at 3:30 p.m.

ROLL CALL

Councilmember Carol Wood, Chair
Councilmember Adam Hussain, Vice Chair
Councilmember Kathie Dunbar, Member (absent)

OTHERS PRESENT

Sherrie Boak, Council Staff
Scott Sanford, Code Compliance
Jeff Burdick, Ingham County Landbank
Calvin Jones, BWL
Chris Swope, City Clerk
Dave Bolan, BWL
Scott Hamhlink, BWL
Betty Draher, Baker Donora
Mary Ann Prince
Roxanne Case, Ingham County Landbank
Kristen Simmons, Assistance City Attorney
Courtney Vincent, Administrative Assistant

Council Member Wood passed the gavel to Council Member Hussain.

Minutes

MOTION BY COUNCIL MEMBER WOOD TO APPROVE THE MINUTES FROM DECEMBER 10, 2015 AS PRESENTED. MOTION CARRIED 2-0.

MOTION BY COUNCIL MEMBER WOOD TO APPROVE THE MINUTES FROM DECEMBER 14, 2015 AS PRESENTED. MOTION CARRIED 2-0.

Council Member Hussain passed the gavel back to Council Member Wood.

Public Comment on Agenda Items

Ms. Prince asked how she can get her water tested. Council Member Wood this would be discussed during the BWL discussion.

Discussion/Action:

Blight elimination grant update (Scott Sanford, BWL Representative & Jeff Burdick from Land Bank)

Ms. Vincent called Todd Heywood from the City Pulse per his request of to listen to the meeting.

Council Member Wood explained that Committee was looking for update on the Blight Elimination Grant concerning the number of properties that had been removed and what was left to be completed. Before this meeting she had read the emails that were recently released by the Governor and in them was a report from DEQ concerning Flint water and in it was a reference to Blight Elimination Grant and effects on the water. So along with the Ingham County Landbank the Board of Water and Light was also invited to come.

Mr. Burdick stated the Landbank has demolished 231 properties with the grant. They will also be making recommendations on the vacant lots as whether to sell them to adjacent properties, use them for community use or sale them for infill. Mr. Burdick distributed lists of Eligible Properties, and Hardest Hit Expenses. Council Member Wood asked where they should direct people if they are interested in the vacant lots, and she was informed they should contact the Landbank to discuss if it is possible, and they will be addressed case by case. The estimated cost for each property when applying for the grant was \$25,000, however the average cost has been \$15,000 so they believe they can address more blighted properties.

There are currently two demolition contractors; SC Environmental and Bolley. They survey what needs to be abated then contact an environmental company to survey what is a hazard with each home, and then contact the demolition company. Ms. Case added that the properties are addressed in groups therefore it could take 3-4 months to have each group taken down. This includes all processes, utilities disconnected, BWL, Consumers, testing for hazard materials and trees. Mr. Burdick added that after demolition they remove curb cuts and aprons and replacement sidewalks if needed.

Council Member Wood asked if they notified adjacent properties before demolition. Ms. Case confirmed they do a mailing 30-45 days before to surrounding neighbors which include those that are adjacent to the property and what is across the street. The 2-3 weeks before the contractor puts notices on doors. The contractor communicates and works with BWL if they will be connecting to the fire hydrants.

Mr. Bolan and Mr. Hamhlink outlined the process every contractor must do with BWL to connect to the hydrant which includes use of a certified backflow preventer, paid a \$150 fee, a \$250 deposit and receive a permit. BWL also performs all inspections on site with the connection.

Ms. Case stated in some cases the contractor does no hook up the hydrant but brings in their own water.

It was confirmed that the issues in Flint are not issues here because BWL permits and works with the demolition contractors. The backflow preventer and the size of the hoses are extremely important with regard to disruption of lines causing sediment to be disturbed and creating problems in the water.

Council Member Wood asked who does and when the water lines are capped. Mr. Bolin noted the valve between the main and the house is stubbed when it is demolished. If and

when there is a new house, they will replace the lead service. It was noted that after the contractor is done with the hydrant, BWL goes to the site and checks to make sure it was drained properly.

BWL noted there are 120 residential testing sites for water in the City and it is done monthly. BWL is working on providing more information to the community.

Ms. Prince asked if the demolition is not done correctly who is held accountable. Mr. Burdick stated the contractors are insured and bonded, and any resident can contact the Landbank if they have a concern.

Council Member Wood asked since most of the structures have lead paint how is that handled. Ms. Case explained that all materials are taken off the site and not put in the basement and the dirt in and around the property is also removed.

Betty Draher inquired about 900 Baker and whether that could be added to the list. Mr. Burdick explained it is on the list for this spring and it will probably cost more than the \$15,000 but the Ingham County Treasurer said he would make sure any additional money need would be available to the Landbank.

Council Member Wood asked Mr. Sanford if the City Make Safe and Demolish is handled the same process and Mr. Sanford confirmed.

Ms. Case stated that the City website has a page with an interactive map on the blight elimination that residents can view.

Council Member Wood asked Mr. Sanford if the premise officers had been hired, trained and given their assignments. Mr. Sanford distributed a map detailing each code officer's area and premise officer area. It was noted there are roughly 1,800 rentals in each district, and reminded the Committee that it is the Premise Officers that address grass, trash and vehicles. Council Member Hussain asked if this was available on the website and Mr. Sanford stated they were working on it.

Update on Collection Bin Permits (City Clerk Chris Swope)

Mr. Swope distributed a spread sheet on bin location, noted that letters were sent to those that did not apply, but his office was not sure if those have been removed or they are ignoring the requirement. There was confusion in his office on whether the letters went to all locations or the vendors who attended meetings, so they cannot confirm all have been notified. It was noted that 930 West Holmes had two, and Mr. Swope stated he would send a letter. Council Member Wood stated she would update the Rejuvenating South Lansing group on 1/26/2016 and they can update her on what they are aware of. Mr. Swope informed the Committee that no Department had been assigned to sign off on the 1,000 feet separation distance so that has now been assigned to Zoning to verify.

Information on Peddlers Licenses (City Clerk Chris Swope)

Council Member Hussain asked about the food trucks at Pleasant Grove Plaza, and Council Member Wood confirmed that these types of vehicles are not laid out in the Ordinance, so it would make sense to address them in the ordinance.

Council Member Wood asked if they are required to have a certificate from the Ingham County Health Department, Mr. Swope would look at the application. It was confirmed they have to have certification from all others that are required by law. Mr. Swope will check with his staff to make sure they are getting copies.

DRAFT

Council Member Hussain asked if there is no license if they can be cited and Mr. Swope stated they call LPD, however are not sure if they cite them or warn. Ms. Simmons confirmed if they are cited, City Attorney does prosecute them, however she has only seen one situation since 2014. Council Member Wood asked the Clerk's office and Law to work together looking at peddlers and transient merchant along with food trucks to see where potential amendments can be made in the ordinance. This should also include how peddlers are addressed with the Health Department.

The City Clerk was asked to add the list of licensed vendors to his website and where they can operate, updating quarterly. Mr. Swope also offered to do that with the collection bins.

Citizen Investigator (Retirement of Bernard Brantley 2/1/2016)

Council Member Wood noted that in 1998 City Council passed an ordinance that dealt with the hiring of a Citizen Investigator. The Board of Police Commissioners hires the position and it is housed in HRCS. Recently it was brought to their attention that the current Investigator is retiring as of 2/1/2016. The Police Chief was invited to the meeting but was unable to attend; the Board Chairperson will be calling a special Board meeting to fill the position. There will be an update at the next Committee on Public Safety meeting on 2/12/2016.

OTHER

Council Member Wood informed the group that she recently was speaking to Deputy City Attorney Mark Dotson about the current Medical Marihuana Ordinance, the State laws and if the City can start enforcing the ordinance and if not to start work on one that is enforceable.

Ms. Simmons stated that she was aware that the City Attorney had submitted a draft to the Mayor's office in December, but Law had not heard back. Council Member Wood noted that if Council is not getting anywhere with Mayor's office, they should start drafting one themselves. If the City has to change it once the State resolves their issues they can. Ms. Simmons confirmed their draft included a resolution for fees, and also her belief that it stated there should not be more than three (3) dispensaries in a Ward, allowing 12 overall for the City.

Council Member Hussain asked about working on overnight parking on residential street. Council Member Wood confirmed they had sent a request for the Chief and the Mayor to look at the situation, and Mr. Kilpatrick in Public Service was pulling statistics for parking on one side and no parking on the other side. This will be placed on an upcoming agenda.

Council Member Hussain asked if HR could be brought to a meeting for discussion on LPD hiring. Also at the same meeting a discussion on Community Police Officers updates. Council Member Wood noted this too can be done at the February 26th meeting.

ADJOURN

The meeting was adjourned at 4:49 p.m.

Submitted by,

Sherrie Boak, Recording Secretary

Lansing City Council

Approved: _____



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Honorable Mayor Virgil Bernero
Members of Lansing City Council

Dear Mayor Bernero and Members of Council:

We write to you as community leaders residing in or representing Lansing's Eastside. We meet routinely to discuss issues of importance to our side of town and beyond. We continue to be concerned about the re-emergence and increase in numbers on neighborhood corridors of businesses purporting to serve medical marijuana patients.

You may recall that a few years ago, fourteen dispensaries popped up on Michigan Avenue alone. While the sheer number was alarming to neighboring residents and business owners, what was worse was that there was no ordinance in place that dealt with related safety and health concerns. We were quite relieved when Council did pass an ordinance – an ordinance that we understand is still on the books. Immediately after passage of our local ordinance, State Attorney General Schuette provided an opinion essentially outlawing dispensaries, and subsequently the Lansing City Attorney ordered the closing of all dispensaries.

We are aware that the Michigan legislature continues to debate legislation that will help guide municipalities in their management of businesses/caregivers providing medical marijuana to registered patients. In the meantime, we respectfully request that the City enforce the ordinance that is on the books in order to avoid a repeat of the unregulated, chaotic, and damaging situation we endured several years ago.

While dispensaries are appearing throughout the City, we are particularly concerned about those that are opening on our primary corridors, especially those that have been the focus of significant improvement efforts. We believe that an unregulated environment can only damage efforts to retain and attract new businesses to these corridors and new residents to our neighborhoods.

Again, we ask that existing regulation be enforced or seriously revisited. We are also interested in proposed limits to the number of dispensaries allowed to operate per ward (three sounds like a reasonable number) as well as proposed limits to the zoning types in which they may locate. Should you wish to discuss this topic with us in person, we invite you to join us on either February 19 or March 18 around lunch time. We look forward to working with you in partnership on this issue.

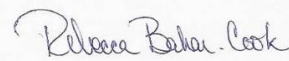
Respectfully,



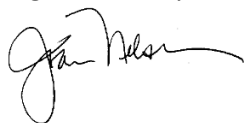
Brian McGrain
Ingham County Commission



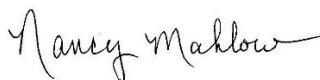
Jody Washington, Ward 1 Rep.
Lansing City Council



Rebecca Bahar-Cook
Ingham County Commission



Joan Nelson
Allen Neighborhood Center



Nancy Mahlow
Eastside Neighborhood Organization



Andy Schor
House of Representatives



City of Lansing

OFFICE OF THE CITY ATTORNEY

Brig Smith, City Attorney

August 25, 2011

First Class Flight
4215 N. Grand River
Lansing, Michigan 48906-2680

Re: *State v McQueen Ruling*

Dear First Class Flight:

As you may be aware, the Court of Appeals issued its ruling in *State v McQueen* yesterday. The Court of Appeals held that sales of marihuana among qualifying patients are *not protected* by the Michigan Medical Marihuana Act. Because this ruling renders illegal the activities occurring at most, if not all, medical marihuana establishments, my office has advised the City Clerk not to issue any licenses for the operation of medical marihuana establishments at this time. Without a license, you are operating illegally under local law.

Moreover, as to state law, I am advising all medical marihuana establishment operators to refrain from engaging in any activities that do not comply with the Michigan Medical Marihuana Act as it has been interpreted by the Court of Appeals. Medical marihuana establishments that continue to engage in activities that do not comply with the Act will be subject to civil and criminal enforcement and to any penalties provided by law.

Sincerely,

A handwritten signature in black ink, appearing to read "Brig Smith", is written over a large, stylized, looped flourish.

Brig Smith
City Attorney

cc: Teresa Szymanski, Chief of Police
Chris Swope, City Clerk
Stuart Dunnings, Ingham County Prosecutor

Medical Marihuana Establishments Ordinance Chapter 1300

1. All Medical Marihuana establishments are required to have a license.
2. Licenses are good for one year.
3. You must obtain a license at least 30 day prior to opening an establishment.
4. Application for individual is to include name, date of birth, physical address, email address, one or more phone numbers, including emergency contact information.
5. Application for corporation of limited liability to include designated stakeholder name, date of birth, physical address, email address, one or more phone numbers, including emergency contact information.
6. Applicant to included name and address of establishment.
7. Applicant and stakeholders affirm he or she has not been convicted or pled guilty to felony involving controlled substance with the seven years of application.
8. Proof of ownership of the premises where the medical marihuana establishment is operating OR written consent from the property owner for use of the premise to be used for this purpose. Also copy of the lease for the premises.
9. Proof if insurance covering the establishment and naming the City as additional insured party for at least \$1,000,000 for property damage, at least \$1,000,000 for injury to one person, at least \$2,000,000 for injury to two or more person.
10. Must submit Security plan.
11. Must submit Floor plan.
12. Affidavit that neither the applicant nor any stakeholder is in default to the City.
13. Affidavit that at least one primary caregiver is to be involved in the distribution or growth of marihuana.
14. City would issue only 48 license at non-refundable amount of \$1,000.
15. Inspection the proposed property by Fire Department & Building Safety.
16. Applicant and each stakeholder passed a background check.
17. Zoning Administrator has confirmed that the proposed location meets the Zoning Code.
18. City Treasure confirmed that the applicant and each stakeholder are not in default to the City.
19. License is nontransferable and any changes from the original application must be reported to the clerk within 10 day.
20. No medical marihuana establishment shall be open between 11:00 pm and 7:00 am
21. No medical marihuana establishment shall permit a person under the age 18 on premises unless with qualifying patient or with parent or legal guardian.
22. No consumption of marijuana shall be permitted on premises. Also a sign posted stating such.
23. Continuously monitor of the entire premises operated with security camera with footage store off-site location for 14 days.
24. Ay usable marijuana shall be secured in a safe permanently affixed to the premises.
25. Any drive-through window on the premises shall have been part of a site plan approved by Planning & Neighborhood Development.
26. You cannot create noise, dust, vibration, glare, fumes or odors detectable to normal senses beyond the boundaries of the property.

27. License must be displayed.
28. Packaging must contain: A unique alphanumeric identifier for the cultivation source of the marihuana; that the package contains marihuana; the date of delivery, weight, type of marihuana and dollar amount or other consideration being exchanged in the transaction; certification that all marihuana in any form contained in the package was cultivated, manufactured, and packaged in the State of Michigan
29. Warning information printed on the package: This product is manufactured without any regulatory oversight for health, safety or efficacy. There may be health risks associated with the ingestion or use of this product. Using this product may cause drowsiness. Do not drive or operate heavy machinery while using this product. Keep this product out of reach of children. This product may not be used in any way that does not comply with the Michigan Medical Marihuana Act or by any person who does not possess a valid medical marihuana patient registration card.
30. No establishment can be within 1,000 feet of a public or private elementary, vocational, or secondary school; a public or private college, community college, or university; a playground; a church or other structure in which religious services are conducted; a child care organization required by the Child Care Organizations Act, PA 116 of 1973, to be licensed or registered by the Michigan Department of Human Services; or a facility at which substance abuse prevention services or substance abuse treatment and rehabilitation services
31. No establishment can be within 1000 ft of another medical marihuana establishment
32. No establishment can be within 100 ft. of public or private youth center, public swimming pool or video arcade facility.

CHAPTER 1300. - MEDICAL MARIHUANA ESTABLISHMENTS

1300.01. - Definitions.

For the purposes of this chapter:

- (a) Any term defined by the Michigan Medical Marihuana Act, MCL 333.26421 et seq., shall have the definition given in the Michigan Medical Marihuana Act.
- (b) Any term defined by 21 USC 860(e) shall have the definition given by 21 USC 860(e).
- (c) The following terms shall have the definitions given:

Change in the identity means either (a) with respect to an individual, substitution of another individual or any other entity; or (b) with respect to any entity other than an individual, the elimination or replacement of every stakeholder.

Existing medical marihuana establishment means a medical marihuana establishment identified in Chapter 876 of the Lansing Codified Ordinances, prior to repeal by this ordinance, as being in operation on or before December 8, 2010.

Medical marihuana establishment means any nonresidential land use involving the growth or distribution of marihuana.

Stakeholder means, with respect to a limited liability company, an employee, a manager or a member, and, with respect to a corporation, whether profit or non-profit, an employee, an officer, director, member, or shareholder.

(Ord. No. 1168, § 1, 6-27-11)

1300.02. - Operation without license prohibited.

- (a) No person shall operate a medical marihuana establishment in the City without first obtaining a license to do so from the City Clerk.
- (b) The City Clerk may issue licenses for medical marihuana establishments only to individuals, limited liability companies, and corporations, whether profit or nonprofit. The term of each license shall be one year. Council shall establish, by resolution, an appropriate license fee and a maximum number of licenses to be issued by the City Clerk.

(Ord. No. 1168, § 1, 6-27-11)

1300.03. - License applications.

- (a) Application for a license required by this chapter shall be made in writing to the City Clerk at least 30 days prior to (1) commencing operation of a medical marihuana establishment; or (2) the expiration of an existing license. Existing medical marihuana establishments shall make application for a license required by this chapter in writing to the City Clerk within ten days of the effective date of this chapter.
- (b) An application for a license required by this chapter shall contain the following:
 - (1) The appropriate nonrefundable license fee in the amount set by Council resolution;

- (2) If the applicant is an individual, the applicant's name, date of birth, physical address, email address, and one or more phone numbers, including emergency contact information;
 - (3) If the applicant is not an individual, the names, dates of birth, physical addresses, email addresses, and one or more phone numbers of each stakeholder of the applicant, including designation of a stakeholder as an emergency contact person and contact information for the emergency contact person;
 - (4) The name and address of the proposed medical marihuana establishment and any additional contact information deemed necessary by the City Clerk;
 - (5) For the applicant and for each stakeholder of the applicant, an affirmation that he or she has not been convicted of or pled guilty to a felony involving controlled substances within the seven years preceding the date of application;
 - (6) One of the following: (a) Proof of ownership of the entire premises wherein the medical marihuana establishment is to be operated; or (b) written consent from the property owner for use of the premises in a manner requiring licensure under this chapter along with a copy of the lease for the premises;
 - (7) Proof of an insurance policy covering the medical marihuana establishment and naming the City as an additional insured party, available for the payment of any damages arising out of an act or omission of the applicant or its stakeholders, agents, employees, or subcontractors, in the amount of (a) at least \$1,000,000.00 for property damage; (b) at least \$1,000,000.00 for injury to one person; and (c) at least \$2,000,000.00 for injury to two or more persons resulting from the same occurrence;
 - (8) A security plan meeting the requirements of this chapter;
 - (9) A floor plan of the premises on which the medical marihuana establishment is to be operated;
 - (10) An affidavit that neither the applicant nor any stakeholder of the applicant is in default to the City;
 - (11) An affidavit that at least one primary caregiver is to be involved in distribution or growth of marihuana at the medical marihuana establishment.
- (c) Upon receipt of a completed application meeting the requirements of this chapter and confirmation that the number of existing licenses does not exceed the maximum number established by resolution pursuant to subsection 1300.02(b), the City Clerk shall refer a copy of the application to each of the following for their approval: The City Attorney, the Police Department, the Fire Department, the Building Safety Office, the Zoning Administrator, and the City Treasurer.
- (d) No application shall be approved unless:
- (1) The Fire Department and the Building Safety Office have inspected the proposed location for compliance with all laws for which they are charged with enforcement;
 - (2) The applicant and each stakeholder of the applicant have passed a background check conducted by the Police Department;
 - (3) The Zoning Administrator has confirmed that the proposed location complies with the Zoning Code;
 - (4) The City Treasurer has confirmed that the applicant and each stakeholder of the applicant are not in default to the City.
- (e) If written approval is given by each individual or department identified in subsection (c), the City Clerk shall issue a license to the applicant.
- (f) Licenses issued under this chapter are nontransferable; a change in the medical marihuana establishment's location or a change in the identity of the licenseholder shall be deemed a transfer under this chapter and shall be prohibited.

- (g) Licensees shall report any other change in the information required by subsection (b) to the City Clerk within ten days of the change. Fees shall be set by Council resolution for any stakeholder added after the original application is filed.

(Ord. No. 1168, § 1, 6-27-11)

1300.04. - Denial and revocation.

- (a) A license issued under this chapter may be revoked after an administrative hearing at which the City Clerk determines that any grounds for revocation under subsection (b) exist. Notice of the time and place of the hearing and the grounds for revocation must be given to the licensee at least five days prior to the date of the hearing, by first class mail to the address given on the license application or any address provided pursuant to subsection 1300.03(g).
- (b) A license applied for or issued under this chapter may be denied or revoked on any of the following bases:
 - (1) Violation of this chapter;
 - (2) Commission of fraud or misrepresentation or the making of a false statement by the applicant during the application process;
 - (3) Any conviction for or guilty plea to a felony involving controlled substances by the applicant or any stakeholder of the applicant occurring: (a) Within the seven years preceding the date of application or the date of becoming a stakeholder, whichever occurs later; or (b) while licensed under this chapter.
 - (4) Commission of fraud or misrepresentation or the making of a false statement by the applicant or any stakeholder of the applicant while engaging in any activity for which this chapter requires a license.

(Ord. No. 1168, § 1, 6-27-11)

1300.05. - Operation of medical marihuana establishments.

- (a) No medical marihuana establishment shall be open between the hours of 11:00 p.m. and 7:00 a.m.
- (b) No medical marihuana establishment shall permit a person under the age of 18 on its premises unless the person is (1) a qualifying patient who is registered with the Michigan Department of Community Health; or (2) accompanied by a parent or legal guardian.
- (c) No consumption of marihuana shall be permitted on the premises of a medical marihuana establishment, and a sign shall be posted on the premises of each medical marihuana establishment indicating that consumption is prohibited on the premises.
- (d) Medical marihuana establishments shall continuously monitor the entire premises on which they are operated with security cameras. The recordings shall be maintained in a secure, off-site location for a period of 14 days.
- (e) Any usable marihuana remaining on the premises of a medical marihuana establishment while the medical marihuana establishment is not in operation shall be secured in a safe permanently affixed to the premises.
- (f) Any drive-through window on the premises of a medical marihuana establishment shall have been part of a site plan approved by the Planning and Neighborhood Development Department prior to the effective date of this chapter.

- (g) No medical marihuana establishment shall be operated in a manner creating noise, dust, vibration, glare, fumes, or odors detectable to normal senses beyond the boundaries of the property on which the medical marihuana establishment is operated.
- (h) The license required by this chapter shall be prominently displayed on the premises of a medical marihuana establishment.
- (i) Disposal of marihuana shall be accomplished in a manner that prevents its acquisition by any person who may not lawfully possess it and otherwise in conformance with State law.
- (j) All marihuana delivered to a patient shall be packaged and labeled as provided in this chapter. The label shall include:
 - (1) A unique alphanumeric identifier for the person to whom it is being delivered;
 - (2) A unique alphanumeric identifier for the cultivation source of the marihuana;
 - (3) That the package contains marihuana;
 - (4) The date of delivery, weight, type of marihuana and dollar amount or other consideration being exchanged in the transaction;
 - (5) A certification that all marihuana in any form contained in the package was cultivated, manufactured, and packaged in the State of Michigan;
 - (6) The warning that:

This product is manufactured without any regulatory oversight for health, safety or efficacy. There may be health risks associated with the ingestion or use of this product. Using this product may cause drowsiness. Do not drive or operate heavy machinery while using this product. Keep this product out of reach of children. This product may not be used in any way that does not comply with the Michigan Medical Marihuana Act or by any person who does not possess a valid medical marihuana patient registration card.
 - (7) The name, address, email address, and telephone number of an authorized representative of the dispensary whom a patient can contact with any questions regarding the product.

(Ord. No. 1168, § 1, 6-27-11)

1300.06. - Location of medical marihuana establishments.

- (a) No medical marihuana establishment shall be located within:
 - (1) One thousand feet of the real property comprising a public or private elementary, vocational, or secondary school; a public or private college, community college, or university; a playground; a church or other structure in which religious services are conducted; a child care organization required by the Child Care Organizations Act, PA 116 of 1973, to be licensed or registered by the Michigan Department of Human Services; or a facility at which substance abuse prevention services or substance abuse treatment and rehabilitation services, as those terms are defined in Part 61 of PA 368 of 1978, MCL 333.6101 et seq., are offered;
 - (2) One thousand feet of another medical marihuana establishment; or
 - (3) One hundred feet of a public or private youth center, public swimming pool, or video arcade facility.
- (b) Nothing in this section shall be construed as prohibiting any land use described herein, other than a medical marihuana establishment, from locating within the specified proximity of a medical marihuana establishment subsequent to establishment of the location of the medical marihuana establishment.

- (c) Effective July 1, 2012, existing medical marihuana establishments shall be subject to subsection (a) and shall be limited to the F or F-1 Commercial, H Light Industrial, or I Heavy Industrial Zoning Districts pursuant to Sections 1268.02, 1272.02, and 1274.02 of the Lansing Codified Ordinances.

(Ord. No. 1168, § 1, 6-27-11)

1300.07. - Penalty.

Any person in violation of any provision of this chapter or any provision of a license issued under this chapter is responsible for a misdemeanor, punishable by a fine of up to \$500.00 plus costs of prosecution, 90 days imprisonment, or both, for each violation.

(Ord. No. 1168, § 1, 6-27-11)



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PUBLIC RECORD

Several LPD officers have told me that "it is a waste of their time" to build cases against the illegal dispensaries because the City Attorney refuses to forward them to the Prosecuting Attorney. When Stuart Dunning spoke at Rejuvenating South Lansing, he said that if cases are not presented to his office, there is nothing he can do to stop them.

The Mayor has stated publicly that he "hopes there is a shop on every corner". He has his wish.

The "City Pulse" brags that clients come from all over the state and from out of state to Lansing because of all our dispensaries. I do not believe that this is the reputation residents of the city want.

Surrounding cities are not having this problem. They have ordinances and enforce them. The fact that our ordinance is not being enforced is the fault of the Mayor and the City Attorney at his direction.

The petitions presented to City Council prove that many residents are fed up and expect help from the people they have elected. Remember, you work for us.

Kathy Miles

~~2/12/16~~ Submitted at meeting 2/12/16

Bed Bug Management

Making Decisions About the Management of Suspected Infestations

Adult Bed Bug



© Stephen Dogget

Bugs observed, bites experienced during the day or night. **DON'T PANIC!**

YES

Inspect the sleeping area for signs of bed bugs. Pay close attention to mattress, bed frame, headboard, and bedside tables.

YES

Live (crawling) bugs, cast skins, eggs, or dried blood spots present?

NO

- DO NOT treat for bed bugs
- Consider other biting insect exposure, perhaps outdoors, or other cause of skin irritation
- Monitor residence for future signs of bed bugs
- Educate tenants on how to reduce chances of introducing and spreading bed bugs

YES

Do bugs resemble bed bugs? [compare to [images](#)] or has professional identified as bed bugs?

NO

- DO NOT treat for bed bugs
- If still unsure of pest ID, collect samples & contact local county extension office, health department, or pest management professional (PMP)
- If another type of insect infestation has been identified, treat accordingly using professional pest management, or if applying insecticides in the home yourself, always follow label directions
- Educate tenants on how to reduce chances of introducing and spreading bed bugs

YES

Homeowner

Landlord or Property Manager

Tenant

- Contact licensed pest management professional to implement integrated pest management plan [ask about bed bug experience]
- Reduce clutter, inspect & vacuum crevices around room and furniture, caulk crevices
- Encase mattress to restrict access by bed bugs

- Contact landlord
- Cooperate with landlord & pest management professional to implement integrated pest management plan
- Reduce clutter, vacuum crevices around room and furniture & encase mattress
- DO NOT attempt to treat with insecticides. Regulations may require that insecticide application be performed by a licensed applicator only

- Be attentive to signs and complaints about bed bugs
- Cooperate with tenants & pest management professional to implement integrated pest management plan
- Work with resident to form a workable pest management plan that involves prep by resident, treatment by PMP, education and response from landlord
- Inspect, caulk crevices around room, inspect neighboring units to identify and contain further infestations
- Regulations require that insecticide applications be performed by licensed pest management professional

For more information about bed bugs, prevention, and management visit:
www.michigan.gov/emergingdiseases

This flowchart has been published by the Michigan Bed Bug Working Group (July 2009) and adapted from the Harvard School of Public Health © 2005



Submitted at meeting 2/12/16



**U.S. Department of Housing and Urban Development
Office of Public and Indian Housing**

SPECIAL ATTENTION OF:

NOTICE: PIH-2012-17

Regional Directors; State and Area
Coordinators; Public Housing Hub
Directors; Program Center Coordinators;
Troubled Agency Recovery Center Directors;
Special Applications Center Director;
Administrators; Offices of Native American
Programs; Public Housing Agencies;

Issued: February 28, 2012

Expired: This Notice remains
in effect until amended, superseded,
or rescinded

Housing; Housing Choice Voucher/Section 8;
Tribally Designated Housing Entities;
Indian Tribes; Resident Management
Corporations

Cross References:

SUBJECT: Guidelines on Bedbug Control and Prevention in Public Housing

I. Purpose

Bedbug infestations have become a serious problem in housing throughout the country. Public Housing properties are not immune to infestations. This Notice provides information and references to best practices regarding the prevention and control of bedbug infestations. It also provides guidance on the rights and responsibilities of HUD, Public Housing Agencies (PHAs) and tenants with regard to bedbug infestations.

II. Background

After a long absence, bedbug infestations are a growing problem in the United States today. According to the United States Environmental Protection Agency (EPA), bedbug populations have increased dramatically. Bedbugs are considered a pest of significant public health importance by the EPA and the Centers for Disease Control and Prevention (CDC). Although the insects are not known to transmit disease, bites may itch and cause an allergic reaction in some people, which may lead to secondary infections. The presence of bedbugs may also contribute to stress or anxiety.

Experts suspect the resurgence is associated with greater international and domestic travel, lack of knowledge regarding the complex measures needed to prevent and control bedbugs, changes in pesticide availability and technology, and increased resistance of bedbugs to available pesticides. Bedbugs are not an indicator of poor sanitation, but excess clutter can provide them more places to hide, making early detection and targeted control

difficult.

HUD has received numerous reports of bedbug infestations in Public Housing properties in various regions. HUD is working closely with other federal agencies to develop and share best practices for preventing and controlling bedbugs.

III. Applicability

This notice applies to PHAs administering the public housing and project based Section 8 program. It may also be of interest to Indian tribes/TDHEs as well as owners/agents providing assisted housing through the Housing Choice Voucher (HCV) Program.

IV. Prevention of Bedbug Infestations

The best approach to bedbug management is to prevent an infestation from occurring in the first place. Federal agencies, such as EPA and HUD, are working in tandem to develop and share recommendations to prevent bedbug infestations.

PHAs are strongly encouraged to develop an Integrated Pest Management (IPM) Plan. Such plans describe the ongoing efforts the property management will take to prevent and respond to pests. For more details on IPM, please see the online guide at <http://www.stoppests.org>. According to the EPA, principles of IPM for bedbugs include:

- Raising awareness through education on prevention of bedbugs;
- Inspecting infested areas, plus surrounding living spaces;
- Checking for bedbugs in luggage and clothes when returning home from a trip;
- Looking for bedbugs or signs of infestation on secondhand items before bringing the items home;
- Correctly identifying the pest;
- Keeping records – including dates and locations where pests are found;
- Cleaning all items within a bedbug infested living area;
- Reducing clutter where bedbugs can hide;
- Eliminating bedbug habitats;
- Physically removing bedbugs through cleaning;
- Using pesticides carefully according to the label directions; and,
- Following up on inspections and possible treatments.

In addition or as part of an IPM plan, PHAs are strongly encouraged to take the following preventive steps:

- Provide training for staff to identify bedbugs, and to perform ongoing prevention actions as outlined in the IPM. When a community is at high risk for bedbugs (for example, if the community has experienced prior infestations), periodic building inspections are recommended.

- Actively engage residents in efforts to prevent bedbugs. Education and involvement of tenants is a critical component of IPM for bedbugs. Bedbugs may often go undetected and unreported and because they are active at night tenants may not be aware of their presence. PHAs may wish to hold workshops for tenants to learn to identify bedbugs, to create unfriendly environments for pests, and to report suspicions of bedbugs as soon as possible.
- Provide orientation for new tenants and staff, and post signs and handouts regarding bedbug prevention.

More information on bedbug prevention may be found by accessing the following websites:¹

- **Healthy Homes Training:** *What's Working for Bedbug Control in Multifamily Housing?: Reconciling best practices with research and the realities of implementation.*
http://www.healthyhomestraining.org/ipm/NCHH_Bed_Bug_Control_2-12-10.pdf.
- **National Pest Management Association Bedbug Hub:**
<http://pestworld.org/pest-world-blog/the-bed-bug-hub-one-stop-shop-for-bed-bug-information>
- **National Pest Management Association Best Practices Website:**
<http://www.bedbugbmps.org>
- **Environmental Protection Agency:**
<http://www.epa.gov/pesticides/bedbugs/>
- **Public Housing Environmental Conservation Clearinghouse (PHECC)**
<http://www.hud.gov/offices/pih/programs/ph/phecc/pestmang.cfm>

V. Addressing Infestations

The PHA should respond with urgency to any tenant report of bedbugs. Within 24 hours of the tenant report, the PHA should make contact with the tenant, provide the tenant with information about control and prevention of bedbugs and discuss measures the tenant may be able to take in the unit before the inspection is performed. However, a bedbug inspection and, if necessary, treatment, may take time to schedule. The PHA should endeavor to take appropriate action within a reasonable time period using the guidelines provided below.

¹ An additional resource for interested parties is the *Bedbug Handbook*. L.J. Pinto, R. Cooper, and S.K. Kraft, *Bedbug Handbook: The Complete Guide to Bedbugs and Their Control* (Mechanicsville, MD: S.K. Pinto & Associates, 2007).

Following a report of bedbugs, the PHA or a qualified third party trained in bedbug detection should inspect the dwelling unit to determine if bedbugs are present. It is critical that inspections be conducted by trained staff or third party professionals. Low level inspections may escape visual detection. For this reason, multiple detection tools are recommended. Recent research indicates that “active” bedbug monitors containing attractants can be effective tools for detecting early infestations. Some licensed pest control applicators use canine detection to verify the presence of bedbugs. The inspection should cover the unit reporting the infestation and no less than surrounding apartments consisting of the units above, below, left and right, and should be completed within three business days of a tenant complaint if possible. If reputable, licensed pest control companies are unattainable within three calendar days, the PHA is required to retain documentation of the efforts to obtain qualified services. If an infestation is suspected but cannot be verified using the methods described above, the PHA should re-inspect the unit(s) periodically over the next several months.

When an infestation is identified, the unit and surrounding units should be treated for bedbugs according to the IPM Plan. Chemical treatments are necessary, but not reliable. Therefore, encasement, interception devices, vacuuming, steaming, freezing and commodity or building heat treatments may be utilized as part of the bedbug control effort. Infestations are rarely controlled in one visit. Effective treatment may require two to three visits, and possibly more. The length, method and extent of the treatment will depend on the severity and complexity of the infestation, and the level of cooperation of the residents.

VI. Additional Considerations

PHAs may offer protective tools to residents to help safeguard properties from infestation and recurrences. For example, the PHA may offer residents bed covers, climb-up interceptors, or other detection or protection devices that may become available. PHAs may voluntarily offer to inspect tenants’ furniture before move-in. PHAs may also offer tenants a service of non-chemical treatment of household items upon tenant move-in, non-chemical treatment or inspection of used furniture and/or non-chemical treatment of luggage before it is unpacked when a tenant returns from a trip. Tenants may voluntarily use such services, but PHAs may not require tenants to do so. These services or products are to be offered at the PHAs expense.

A PHA may not deny tenancy to a potential resident on the basis of the tenant having experienced a prior bedbug infestation, nor may give residential preference to any tenant based on a response to a question regarding prior exposure to bedbugs. A PHA may not charge a tenant to cover the cost of bedbug treatment; such costs should be covered by the PHA. HUD reserves the right to approve Lease Addenda. Lease Addenda may not conflict with this Notice.

VII. Tenant Rights and Responsibilities

Tenants are strongly encouraged to immediately report the suspicion of possible bedbugs in a housing unit or other areas of the property. Early reporting allows the pests to be identified and treated before the infestation spreads. Tenants are the first line of defense against bedbug infestations and should be encouraged to create living environments that deter bedbugs. This includes reducing unreasonable amounts of clutter that create hiding places for bedbugs, and regular checking of beds and laundering of linens.

Bedbug infestations can cause health concerns, including physical discomfort and may contribute to stress and anxiety on the part of the residents. Tenants should be advised of the following:

- A PHA may not deny tenancy to a potential resident on the basis of the tenant having experienced a prior bedbug infestation, nor may an owner give residential preference to any tenant based on a response to a question regarding prior exposure to bedbugs.
- A tenant reporting bedbugs may expect expeditious response and attention by the PHA, but should be advised that inspection and, if necessary, treatment of bedbugs may take time to schedule. The inspections should occur within three calendar days of the tenant report when possible.
- Following a report of bedbugs, the PHA or a qualified third party trained in bedbug detection should inspect the dwelling unit to determine if bedbugs are present. It is critical that inspections be conducted by trained staff or third party professionals. The PHA may enter the unit to perform these activities, in accordance with the lease.
- If bedbug infestation is found in the unit, the tenant may expect treatment to begin within five days of the inspection, though depending on the form of treatment, this may not be possible. Tenants should be advised that treatment may take several weeks.
- Tenants are expected to cooperate with the treatment efforts by allowing for heat treatment of clothing and furniture and refraining from placement of infested furniture or other items in common areas such as hallways. Tenant cooperation is shown to expedite the control of bedbugs and to prevent spreading of infestations.
- Management may make staff available to help with moving and cleaning of furniture to accomplish the treatment effort.
- The tenant will not be expected to contribute to the cost of the treatment effort.

- The tenant will not be reimbursed the cost of any additional expense to the household, such as purchase of new furniture, clothing or cleaning services.

VIII. REAC Inspections

Bedbugs should be addressed when reported by staff, tenants or the Real Estate Assessment Center (REAC), regardless of the score of the REAC physical inspection. Inspectors ask the PHA to identify any units and/or buildings that are infested before the inspection begins. When bedbugs are reported or observed, the inspector will record the units and/or buildings affected in the comment section of the Physical Inspection report, noting that bedbugs were reported. The inspector will then select an alternate unit to inspect to replace any unit with observed or reported bedbugs.

REAC sends a “Bedbugs Reported” email to the local PIH field office with a copy to the PIH Regional director when bedbugs are noted in the comments section of a Physical Inspection Report. The PHA will see the information about bedbugs in the comment section of the Physical Inspection Report which provides PHAs with the necessary information to address the situation.

/s/

Sandra B. Henriquez, Assistant Secretary for
Public and Indian Housing

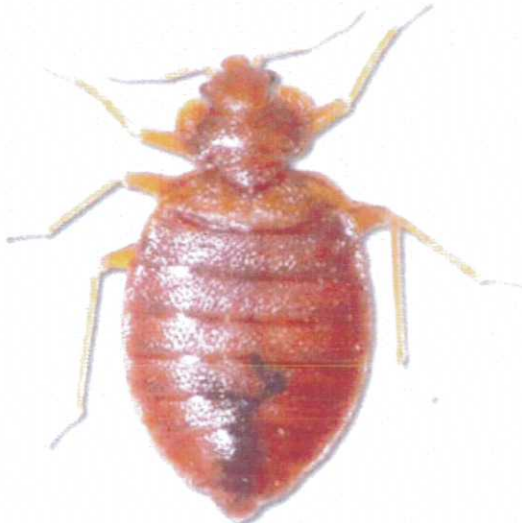
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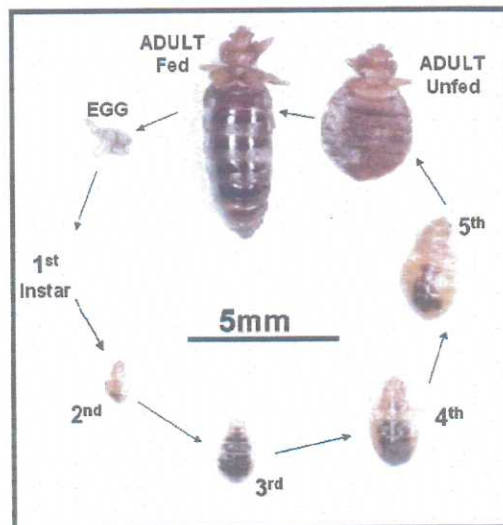
Yes, bed bugs are real, and not the product of urban myth or fables. Recently bed bugs have made a resurgence in the U.S., infesting hotels, apartment complexes, and homes nationally. Although not known to transmit any human disease, they leave a trail of potentially itchy or painful bite reactions, and costly extermination bills in their wake. International travel and tighter environmental regulations on pesticides are thought to be contributors to the recent comeback in the U.S. and many other countries. This fact sheet is designed to describe what bed bugs are, and how citizens can deal with infestations and protect themselves during travel.

What are bed bugs?

Bed bugs are insects, more specifically "true bugs". True bugs have piercing mouthparts that in most species are used for feeding on plants. However, some species of bugs will feed on animal tissues. Bed bugs have mouthparts, which are adapted to feed almost painlessly on the blood of people. Human-associated bed bugs found in the U.S., *Cimex lectularius*, have a flat, oval-shaped body with no wings, and are 4–7mm long. Their color is shiny reddish-brown but after a blood meal they become swollen and dark brown in color (see picture below). There are three stages in the bed bug's life cycle: egg, nymph and adult (see picture below). The eggs are white and about 1mm long. The nymphs look like adults but are smaller. Complete development from egg to adult takes from four weeks to several months, depending on temperature and the availability of food. Both male and female bed bugs feed on the blood of sleeping persons at night. In the absence of humans they can feed on mice, rats, chickens and other animals. Feeding takes about 10–15 minutes for adults, less for nymphs, and is repeated about every three days. Bed bug nymphs can survive for considerable periods (months) without feeding, depending on environmental conditions.



Adult Bed Bug



Life cycle of the human bed bug, *Cimex lectularius*. The stages include egg, nymph (5 instars), and adult.

Asthma Control through Education and Environment (ACE) Program

Recommended Actions for ACE Program Field Staff To Avoid Transporting Bed Bugs from Visited Homes

Bed bugs are a serious concern and one faced by all individuals conducting program delivery in family homes. Infestations are not always apparent and those who visit families or residents in their home should review and follow the guidelines below in order to minimize the potential for transporting bed bugs, cockroaches and other pests to other residences, your workplace, or home. Following these guidelines will protect not only you, but the families you visit.

What is a bed bug?

(See [page 1 of MDCH Bed Bug Fact Sheet](#) - attached)

Prepare a Bed Bug Prevention Kit to keep in car:

- Large plastic storage bin with cover
- Disposable shoe covers
- Wipes and/or a bottle of an appropriate contact killer spray
- Clear sealable plastic bags (e.g. Ziploc)
- Large disposable trash bags
- A change of clothes, socks, and shoes
- Flashlight
- You may also wish to take a small portable stool/chair (simple design, easy to wipe off)

All Staff - Before you enter a home:

- Wear clothes and shoes of simple design – avoid extra hems, folds, pleats, etc. (these provide fewer hiding places for bed bugs)
- Avoid wearing clothes that need to be dry-cleaned
- Wear light colored clothing (easier to see bed bugs on your clothes)
- Consider leaving accessories (scarves, hats, gloves, coats etc.) in the car
- Secure personal belongings such as purses in the car rather than take them into a home
- Put shoe covers over shoes (“booties”) – you can tell the resident that this is staff protocol to avoid tracking dirt into their homes

If doing an inspection:

- Start in bedrooms to visually assess furniture
- Look for evidence of bedbugs prior to putting on mattress covers, such as dark blood spots, fecal matter, eggs; check mattress seams and cracks in the headboard
- Do not lie over beds or other upholstered furniture
- Avoid sitting down on beds or upholstered furniture (when sitting: plastic or wooden chairs, preferred)

In the home:

- Bring as few items as possible into the home

- Use a plastic tote to carry work items (e.g. paper, pens, computer, etc.) & return items immediately to the tote rather than setting them down in the home
- If a client asks you to take off your shoes, you can wear light colored socks or shoe covers.
- If in a home with a known infestation, inspect yourself and items for bed bugs before you leave

If you detect bed bugs in the home:

- Ask the occupant if they are aware of a bed bug problem in the home
- If a rental, help them report the infestation to the owner/manager
- Provide information or refer them to reliable sources of information about bed bugs (for instance, www.michigan.gov/bedbugs)

After You Leave (whether or not bed bugs were seen):

- Carefully, inspect your clothes, shoes, and other items before you enter your car or a neighboring unit
- Use buddy system – check each other’s clothing
- If wearing shoe covers, remove them and seal in a plastic bag for disposal
- Take shoes off, inspect them inside and out
- If you find bed bugs, crush them with a wipe or spray them with the contact killer spray
- If bed bugs are found on your clothes, change them and seal infested clothes in plastic bag
- Place all items that were in the home into the plastic bin until they can be inspected

When you get home:

- Don’t bring work items into your home or workplace until carefully inspected
- Remove clothes in a garage or on a non-carpeted floor
- Launder and dry clothes immediately, or seal them in a plastic bag until you can
- Coats and other items should be dried on moderate to high heat for 20 to 30 minutes

Protect your car:

- Vacuum regularly and avoid clutter in your car.
- Vacuum bags which potentially contain bed bugs should be sealed in a plastic bag prior to disposal.
- Keep home visit equipment in large plastic storage bin or sealed in plastic or Ziploc bags
- Inspect yourself and belongings before entering car.

If you find evidence of a bedbug infestation, give the resident the following instructions:

- Follow Bed Bug Management flowchart for next contact (see attached)
- DO NOT PANIC. Remind residents that bed bugs do not carry disease.
- Vacuum all furniture extremely carefully. Discard sealed bags immediately.
- Wash all bedding & clothing in hot water & dry in hot dryer. Other items may be frozen (- 5 deg. C or 23 deg. F) for at least five days
- Avoid treating with pesticides if possible, and NEVER treat any sleeping surface (ex: mattress or couch) with pesticides.



**National Center for
Healthy Housing**

What's Working for Bed Bug Control in Multifamily Housing: Reconciling best practices with research and the realities of implementation

What's Working for Bed Bug Control in Multifamily Housing:

Reconciling best practices with research and the realities of implementation

February 2010

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Executive Summary

There is no silver bullet for eliminating bed bugs. They present a challenge to modern pest control that the industry is still struggling to meet. To make up for the lack of chemical power we have for battling this insect, additional people and tools must be involved. Bed bug success stories usually involve people who live and work in a building (including a pest management professional) coming together as a team to battle this pest. Throughout this paper you will see how communication and cooperation among residents, staff, and the pest control service provider are keys to success.

This report is designed for health professionals, housing professionals, and pest management professionals seeking to plan for or respond to a bed bug infestation in multi-family housing. It is not a best management practices document and does not comprehensively address the biology, behavior, or health implications of this pest. For information on these topics, contact your local cooperative extension program, university entomology department, or department of health.

It is a summary and evaluation of the methods used to control bed bugs based on published research, trade magazine articles, and interviews with practitioners and



Bed bugs at various stages of growth.

researchers. See the Acknowledgements and References sections for the lists of people and works consulted. This document covers what they have found actually works. The body of the document covers the Pros, Cons, and Recommendations for each management method. References to peer reviewed and non-peer reviewed research are included as footnotes.

The following table is a summary of considerations for IPM methods for bed bugs. Each method is discussed in more detail in this paper.

Summary of Bed Bug Management Methods

Management Method	Primary Responsibility	Retail Cost per System	Commentary	Compatibility with other methods
Laundering	Resident	Dissolvable Bag: \$22 for 10	Laundered fabrics will be free of bed bugs as long as they are kept isolated from infested areas.	Include in every control effort.
Unit Preparation	Resident	Varies	Poor housekeeping, sanitation, etc., are not necessary for a bed bug infestation, but bed bugs are more likely to remain undetected and pest control efforts are more likely to fail in a cluttered home.	Include in every area so that the Pest Management Professional (PMP) can properly inspect the property.

Management Method	Primary Responsibility	Retail Cost per System	Commentary	Compatibility with other methods
Encasements	Resident	\$80 for mattress and \$50 for box spring	Bed bugs that are trapped in an encasement designed for use in bed bug control will not be able to feed or escape and will eventually die. Encasements keep bed bugs from hiding on mattresses as long as they fit snugly.	Use encasements either after treatment or before an infestation is found.
Monitors	PMP, resident, or staff	4 interceptors for \$8. Carbon dioxide attractant attractant devices \$15–\$950 initial cost.	Monitors will catch bed bugs, but are not meant to control infestations.	Monitors can be used alone or in combination with other detection and control methods to confirm active bed bug infestations.
Vacuuming	PMP, trained staff, or trained resident	HEPA Vacuum for \$250–\$500	Vacuuming is not reliable as an exclusive control method.	PMPs, staff, and residents should use a vacuum to remove bed bugs during inspections and unit preparation.
Steam	PMP or trained staff	\$500–\$1500	Steam wand must be moved at a rate that heats the area to a lethal temperature.	Use with other methods such as insecticidal dust for voids that steam cannot penetrate. Mattresses and box springs must be dry prior to encasement.
Thermal Remediation Using Ambient Heat	PMP or trained staff	\$330 for luggage-sized container. \$90,000 for whole unit heater. \$800–\$2,000 to treat an apartment.	Lethal temperatures must penetrate all items for the treatment to kill all stages of bed bugs.	Heat treatment is a good option for cluttered homes where preparation is a struggle.
Bed Bug Detecting Canine	PMP	\$10,000 to purchase. \$1,300 per team per day.	Dogs are effective and efficient for large-scale (multi-unit) inspections.	Use with visual inspection. Treat in areas where the dog alerts.
Pesticides	PMP	Varies by product.	See analysis in the following report. Consider the residual and ovicidal properties of each product before selecting it.	Pesticides are used as needed in combination with other treatment methods.
Freezing Using Dry Ice	PMP	\$6,900 for a machine	Not widely used in the US, but widely used in Europe. Insufficient information to assess at this time.	More research is needed comparing the penetration of both heat and cold.

Acknowledgements

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What's Working for Bed Bug Control?

An Evaluation of Methods

1. Inspections

1.1 Visual Inspections

Pros

All pest control is about site-specific problem solving. The pest management professional (PMP) doesn't need to locate every bed bug to treat successfully, but the PMP needs to look for bed bugs in various locations to determine the extent of the infestation. In addition, a visual inspection is essential for understanding site-specific limitations and preparation needs. Conversations with the residents during inspection may also identify where the bed bugs came from and is an opportunity for educating the residents about preventing further introduction. Both of these are important to property-wide control efforts. Early detection and prompt professional treatment is the most time- and cost-effective solution for bed bugs, and knowing the scope helps the PMP plan for effective treatment. Checking hot spots for signs of bed bugs (e.g., the bugs themselves, eggs, and blood spots) does not take a long time, and a quick inspection for signs of all household pests is already part of many pest control companies' routine service.

Cons

Visual inspections may miss bed bugs in an infested area and often severely underestimate the actual number of bed bugs in apartments (Wang et al., 2009a[†]). Clutter in homes is a significant impediment to finding all bed bug harborages.

Recommendations

Regardless of how the PMP plans to control bed bugs, whoever is responding to a bed bug report should start with visual inspection to understand the extent of the infestation. PMPs, cleaning contractors, landlords, and residents alike should look for all life stages of bed bugs in the hot spots. Research shows that the locations where bed bugs are most often found (in order of most to least often infested) are beds, bedding, baseboard/carpet edges, furniture such



Bed bug crawling into a screwhole to hide.

as nightstands and dressers, upholstered furniture such as couches and chairs, walls and ceilings, clothing, and appliances (Potter et al., 2008a[‡]; Gangloff-Kaufmann et al., 2006a[‡]). These areas should be inspected monthly in a building that has a history or high risk of infestation (e.g., buildings with frequent turnover or high visitor traffic). If monthly inspection is not feasible, quarterly inspection may be substituted, with residents taking a higher responsibility for detecting and reporting bed bugs. Management's commitment to educating residents about pests and fronting the costs of all components of preparation and treatment helps ensure resident cooperation.

When the PMP finds bed bugs, he should perform a thorough inspection¹. At a minimum, the PMP must have access and

¹ *Inspecting the infested residence is a must, but inspection should go beyond the infested unit (Wang et al., 2010[†]). Adult bed bugs can travel over 16 feet in five minutes (Haynes et al., 2008[†]), and adult female bed bugs tend to disperse from clusters (Pfiester et al., 2009[†]). Early instar nymphs often cluster (Benoit et al., 2007[†]), increasing the likelihood of detection. These nymphs also tend to stay close to food sources, which increases the likelihood of detection.*

[†] = source has undergone peer review

[‡] = source is not peer reviewed

inspect all units—above, below, and on all sides (including across the hall)—adjoining infested units. An adjacent unit is often an unreported reservoir of bed bugs².

If the inspection finds bed bugs only in or around a bed, the infestation is most likely light to moderate. In this case, an infested bed can be isolated from the rest of the room by pulling it away from walls and other furniture, keeping any bedding from touching the floor, and putting each bed frame legs in an interceptor (See Section 2.1). PMPs call this process making the bed into an island. If the resident can make the bed into an island, a PMP can potentially resolve a light infestation with two professional treatments and minimal preparation of the area.

When a resident reports bed bugs in a building with no history of bed bugs, management should call a PMP to perform a building-wide bed bug inspection. In response, the PMP will briefly inspect each unit within the building to determine the scope of the infestation and plan treatment accordingly. See Section 4: Unit Preparation. Even if bed bugs are only found in the reported unit, the immediate building-wide response can be used to educate other residents about inspection and prevention.

1.2 Inspections Using a Bed Bug Detection Canine

Pros

Well-trained dogs are useful for the following tasks:

- Building-wide inspections to identify the scope of the infestation (with the intention of treating every site where the dog finds bed bugs);
- Initial inspections to confirm whether an infestation is present when visual inspection cannot find a bed bug;
- Post-treatment verification that no live bed bugs or viable eggs are present; and

² PMPs report migration resulting from dense bed bug infestations and the use of foggers. Building-wide policies against the use of foggers can prevent both migration and the risk of an explosion. At minimum, property management should offer information on proper label use and product selection.

[†] = source has undergone peer review

^{*} = source is not peer reviewed

- At trainings or door-to-door talks as a motivator for residents to find out more about bed bug control.

The last of these is worth highlighting since lack of adherence to the PMP's instructions on the part of either management or residents is often the cause for treatment failures. If a trainer brings a dog to a meeting, it can serve as an icebreaker for discussing the responsibilities of residents and management vis-à-vis bed bug control.

Cons

While bed bug detection canine providers report 98% accuracy, some PMPs remain concerned with false positives (e.g., the dog alerting to an area where bed bugs are not found). The dogs stay most effective with daily tuning and routine check-ups from the original trainer. Controlled training minimizes the chance of false positives. Options for check-ups from the original trainer include in-person visits, video conferencing, and blind test kits that are completed and mailed back to the trainer for scoring.

Dogs have bad days, just like people. If the handler or the dog is having a bad day, the dogs may not perform at their highest levels. An uncomfortable or stressful environment also can affect the dog's performance (Cooper, 2007a[†]). Like other service dogs, bed bug detection canines are not pets. PMPs serving as canine handlers must not forget this distinction at all times.

Recommendations

Inspections using a bed bug detection canine are especially useful in two scenarios. The first is when a person reports bed bugs but the PMP can't find any with visual inspection. The second is when a PMP wants to confirm that the area is bed bug-free, for example post-treatment. Canine inspections for bed bugs can identify emerging infestations in their earliest stages, helping property managers gain building-wide control before an infestation spreads to other units, saving considerable time and money.

Inspection with canines is useful for detection, but as with inspection by humans, there is potential for error. The dog's effectiveness depends upon the quality of its

training, the ability and consistency of its trainer, and the conditions in the area of inspection. In addition, companies should know exactly what their dog can and cannot be expected to do. For instance, not every dog is trained to detect viable versus unviable eggs. If trained and handled properly, bed bug-sniffing dogs can inspect much more effectively and in a much shorter time than a human³.

The National Pest Management Association (NPMA) is starting a canine scent detection division to bring together stakeholders such as the National Entomology Scent Detection Canine Association (NESDCA) to develop national standards and procedures. Properties looking to use a canine for inspection should consult recommendations put forth by this group.

2. Monitors

Monitors are an important tool for bed bug control, which pest control companies may offer as a detection option in place of a visual inspection⁴. Currently, PMPs use two types of bed bug-specific monitors: moat-style interceptors (Climbup® Insect Interceptors); and portable devices that use heat, carbon dioxide, and kairomones as lures (CDC 3000 and NightWatch™). Unpublished research from Dr. Wang's lab at Rutgers University showed their homemade portable monitor was more effective than those commercially available. Many PMPs

³ Research indicates that dogs are able to discriminate bed bugs from *Camponotus floridanus*, *Blattella germanica*, and *Reticulitermes flavipes*, with a 97.5% positive indication rate (correct indication of bed bugs when present) and 0% false positives (incorrect indication of bed bugs when not present). Dogs also were able to discriminate live bed bugs and viable bed bug eggs from dead bed bugs, cast skins, and feces with a 95% positive indication rate and a 3% false positive rate on bed bug feces. In a controlled experiment in hotel rooms, dogs were 98% accurate in locating live bed bugs (Pfiester et al., 2008[†]).

⁴ The only peer-reviewed study on a bed bug monitor reported on the effectiveness of the moat-style interceptor for monitoring bed bugs. This study found interceptors are more effective than visual inspection for estimating numbers and detecting infestations (Wang et al., 2009a[†]).

[†] = source has undergone peer review

[‡] = source is not peer reviewed



also use common sticky traps for bed bug monitoring⁵. Research has not been published on the efficacy of sticky traps as bed bug monitors, but professionals report that the monitors do catch bed bugs if they place enough around hot spots. A heat lure in the center of a sticky trap or placement of several traps may improve performance.

Monitors are without a doubt a valuable addition to the options available for bed bug control. Monitors using carbon dioxide, heat, and a chemical lure have great potential, but are not yet widely used in multifamily housing because they are expensive and have not been on the market for very long. Until more research emerges, the different types of monitors should not be considered as equivalents to each other (or canine inspection) for identifying a bed bug infestation.

2.1 Moat-Style Interceptors

Pros

When users place a bed frame leg in the center of the interceptor, the device makes a moat around the leg.

⁵ A survey of PMPs found that fewer than 50% use glue boards, steamers, fumigation, or freezing for bed bug treatment, and 53% routinely use sticky traps to monitor and detect bed bug activity. Pest control companies also report using double-sided sticky tape around the legs of bed frames (Potter et al., 2008a[‡]).

[†] = source has undergone peer review

[‡] = source is not peer reviewed

Talcum powder applied to the walls of the moats causes bed bugs to slip and fall in, where they remain trapped. These devices are cost effective and PMPs can use them to help confirm complete elimination, show where bed bugs are coming from (an inner and outer moat shows whether the bed bugs came from the floor or the bed), detect an infestation early on, and give residents some reassurance that bed bugs won't get on their bed. While moat-style interceptors are not a complete control tool, they do trap bed bugs in addition to monitoring. Most PMPs consider interceptors worthwhile.

Interceptors are an effective tool for determining the presence of bed bugs and the need for action. Residents often contact experts (e.g., cooperative extension staff) when they suspect they have bed bugs. Experts can save time by giving monitors to residents who suspect they have bed bugs but lack evidence. Asking the resident to use the interceptors to catch a bed bug before asking for a full consultation can save valuable time and help put the person at ease.

Cons

Moat-style interceptors use a sleeping human as the lure and catch bed bugs when they try to crawl up (or down) the bed legs. Their effectiveness can be compromised in several ways:

1. Bed bugs can crawl in and out of the device if the talcum powder that coats the inner-sides of the moat is not kept fresh. Residents or maintenance staff need to maintain the devices.
2. Alternative "bridges" from the floor to the mattress (such as a blanket, bed skirt, or headboard touching the wall) will reduce effectiveness.
3. They cannot be used where furniture does not have legs or the legs cannot fit into the device.
4. The device should be placed on a solid surface to prevent cracking. If there is doubt, a square of 1/4" plywood should be put under the interceptor.

Recommendations

Interceptors are recommended for bed bug monitoring. As passive monitors, interceptors don't share some of the faults

associated with canine and visual inspection because their success isn't contingent upon training or thoroughness. PMPs or property managers should use interceptors to monitor for bed bugs. When published research becomes available comparing interceptors to sticky traps for bed bug monitoring, the latter may also be a defensible option.

2.2 Portable Monitoring Devices⁶

Portable monitors attract bed bugs using heat, carbon dioxide, and a kairomone lure and then trap the insects in a compartment where they die⁷. While effective, use of these interceptors is limited by their cost and availability. The monitors commercially available use the same concepts, but differ in design. For a comparison of the monitors on the market and how to make a low-cost alternative watch for published research by Wan-Tien Tsai in the Wang lab at Rutgers University.

⁶ Existing monitors marketed specifically for bed bugs take advantage of the bed bugs' attraction to heat, carbon dioxide, and a chemical lure to mimic their communication pheromone, usually in some combination. The research supporting these bed bug behavioral triggers is as follows:

- Heat above ambient was found to be overwhelmingly attractive when compared with humidity, blood, carbon dioxide, muscle and subcutaneous tissue, liver, bile, skin, hair, perspiration, sebum, and cerumen (Rivnay, 1930; Marx, 1955; Aboul-Nasr and Erakey, 1967, in Siljander, 2006[†]). These studies also show that the upper limit of heat attractiveness is 110° F. Higher temperatures are repellent (Rivnay, 1930, in Siljander, 2006[†]). These finding should be kept in mind when setting the temperature of monitoring devices, monitoring, and conducting heat treatments.
- The results reported by Siljander are in conflict with two studies that found carbon dioxide to be more attractive than heat and chemical lure (Anderson et al., 2009[†]; and Wang et al., 2009c[†]). All studies show that bed bugs are attracted to carbon dioxide and heat, regardless of which is more attractive.
- Traps baited with chemical lure attract more bed bugs than the control, but not at a statistically significant level (Wang et al., 2009c[†]).

⁷ A kairomone is a similar to a pheromone. It is chemical produced and released by an organism that benefits another organism. The lure mimics a chemical released by humans that benefits bed bugs.

[†] = source has undergone peer review

[‡] = source is not peer reviewed

Pros

This alternative monitoring and inspection option should work better than interceptors in the following situations:

1. To help confirm that the unit does not have bed bugs when it is vacant. This can also be achieved by canine inspection.
2. To keep bed bugs from migrating from a vacant unit to find an alternative host until the PMP does a bed bug service.
3. To confirm the presence of bed bugs in areas not inhabited by humans at night (such as a laundry room or office space). Canine inspection can also achieve this.
4. To monitor when there is a bed frame without legs such as a captain's bed (platform bed with drawers under the mattress) or a mattress directly on the floor.

Cons

Commercially available portable devices that use heat, carbon dioxide, and kairomones as lures can be expensive (over \$500). Researchers are experimenting to determine their effectiveness. This will help justify their cost and give guidance to operators (PMPs) on how often they need to replace carbon dioxide canisters and lures.

Recommendations

PMPs who have done their own field tests on portable devices report good results, especially in vacant areas. Peer-reviewed research is needed to confirm the efficacy of portable devices and identify the situations in which they are most effectively used. Until then, the only situation for which it appears that portable devices are uniquely qualified is for use in vacant, infested units awaiting treatment. A portable device used in such a situation may minimize the chance of bed bug migration to adjoining units.

3. Non-Chemical Treatment Methods

3.1 Clutter Removal

Pros

The bed bug's ability to hide is one of the main reasons why it is such a formidable opponent. Reducing the

harborage available to bed bugs increases the chance that a PMP will find (and thus be able to kill) the insects⁸.

Cons

It is important to be sensitive to the time and financial limitations of residents and property staff. PMPs also need to accommodate residents' desire to keep sentimental belongings as well as handicaps that may impede residents' ability to control clutter. If the PMP asks more than is necessary of the residents and/or management or if those doing prep work do not understand the rationale behind the preparation requirements, then the task may seem daunting and they may be less likely to attempt to prepare the unit. In addition, any disruption to the area may cause bed bugs to spread.

Recommendations

Experts often tout clutter removal as an essential part of bed bug elimination. When an effort to eradicate an infestation fails, it is almost always due to clutter and lack of cooperation with the pest control company's preparation and follow-up instructions. The most complex environment for bed bug eradication is in multifamily housing, especially in low-income housing. The complexity comes from the number of people involved and limited resources for costly preparation materials, such as mattress encasements.

Before the initial visit, the pest control company should only request that residents do a basic clean up of the bedroom and other suspect locations. Residents should pick up items strewn on the floor and vacuum as they ideally would for a landlord inspection. The property

⁸ No unit preparation was required of the residents in Moore and Miller's study which evaluated pesticides commonly used for bed bug control. Their traditional treatment (pyrethroid and insect growth regulator [IGR]) reduced bed bugs by 95% by the end of eight weeks (having been treated four times) and isolated the bed bug infestation to the mattress and bed area. The novel treatment (pyrrole, alcohol, dust, and IGR) reduced bed bugs by 86%, but did not isolate the infestation to the bed (Moore and Miller, 2008[†]). In this study, bed bug infestations were reduced, but not eliminated. The researchers state that this is due in part to the fact that no cleaning or preparation was done.

[†] = source has undergone peer review

^{*} = source is not peer reviewed

manager should include instructions for this basic clean up with the notice of service. Minimal preparation avoids disrupting the bed bugs and limits the burden on staff and residents. To expedite inspection and minimize the chance of PMPs chipping paint, maintenance personnel are sometimes asked to loosen the screws and plates on any switch or outlet plates in the vicinity of the bed.

If the infestation is light and the bed can be isolated as an island, the PMP may treat during the initial visit and schedule the follow-up treatment. Alternatively, the PMP should leave detailed preparation instructions for the resident and schedule his next visit (at which time he will treat). Regardless of the level of preparation needed, any time a PMP finds a bed bug, he should kill and remove it.

If correct room preparation is essential to the effective and efficient elimination of a bed bug infestation, then PMPs should plan this aspect of control as carefully as they do chemical choices. At first, property management will not have the knowledge to determine the level of preparation necessary and must rely on the PMP for education and instructions. Once management and the PMP work together on a few successful eliminations, management may be able to begin to predict the level of preparation necessary in a given situation and advise the residents accordingly before the PMP's first visit.

3.2 Disposal of Infested Items

Pros

Although it seems logical to get rid of bed bugs by getting rid of the things they hide in, the number of items thrown away does not seem to correlate with the success of the control effort. In most cases, infested items do not have to be thrown away. In fact, in multifamily settings, the risk of spreading the infestation (by bed bugs falling off the furniture during transport and by others scavenging the items) is often greater than the benefit to the control effort. Two scenarios that may warrant removal are the following:

1. Disposal may be the most sanitary option when a well-established infestation exists on a piece of furniture.
2. Disposal may be the most practical option if the PMP finds a heavily infested, complex piece of furniture (one

that offers lots of harborage to bed bugs) for which encasements are not available.

Cons

PMPs must be sensitive to the potential for disrupting the bed bugs when asking residents to dispose of items. Also, PMPs must take the limited resources of the residents into consideration when recommending disposal. The mattress and box spring are usually the most heavily infested items. Replacing them can be a significant financial burden on the resident. If a company delivers the new mattress and takes away the old one in the same truck, there is potential for spread. Residents may also unintentionally re-introduce bed bugs with replacement mattresses because the cheapest mattresses are often from the curb or refurbished. Residents bringing home infested items they find outside the building are often blamed for building-wide infestations.

Recommendations

Disposal of items should never be part of a control effort before the PMP visits the home unless the building staff members have experience with successful bed bug control and think it is necessary. The PMP should identify what needs to be thrown away and give specific instructions for disposal. If the budget allows, treating the infested item (at least to significantly reduce the population) before removing it is recommended as a part of reinfestation prevention. Staff or PMPs should wrap identified items (so that bed bugs don't fall off and migrate to new locations during transport and storage) and immediately bring them to a secure location where others cannot pick them up and bring them home. Inspection and treatment of vehicles and locations involved in disposal can be included as part of the bed bug service. If there is any chance of passers by seeing the item, whoever is responsible for disposal should make it unusable by breaking it or cutting open the fabric on all sides. Marking the item with a picture of a bed bug or writing "Bed Bugs/Chinches" may also deter passers by from bringing the item back in the building.

In low-income housing settings, management should give residents bed bug-proof encasements for mattresses and box springs when the PMP finds bed bugs. Encasements eliminate the need to apply pesticides on bedding, make inspection easier, and trap bed bugs inside where they eventually die.

3.3 Isolation in Plastic Containers or Bags

Pros

Containing items in containers or bags simplifies the habitat for treatment, keeps items that do not have bed bugs from becoming infested, and contains infested items for later treatment. Knowing that items sealed in bags are protected from future infestation may comfort residents.

Cons

Containment efforts kill bed bugs only if the insects have no chance for escape and the items are either left enclosed for a long enough time to starve the bed bugs⁹ or if the PMP uses a chemical in the bag or sealed container¹⁰.

Recommendations

As discussed previously, PMPs should determine the extent of the infestation and take resident time and financial limitations into consideration before requiring this type of preparation. If plastic containers are used, the PMP or resident should treat items in containers so that the bed bugs die. Laundry, carbon dioxide, heat, and fumigation are all options for treatment. Freezing the container and its contents in a freezer is unreliable¹¹.

3.4 Petroleum Jelly as a Barrier

Pros

Residents can use a barrier of petroleum jelly for a variety of situations. Building a barrier on a table around a television may be an effective way of protecting hard-to-treat items from infestation¹².

^{9†} *Unpublished research by Andrea Polanco out of the Miller lab at Virginia Tech has shown that starved bed bugs die faster than previously thought. Whereas existing recommendations (based on old research) tout that bed bugs can live over a year without a meal, bed bugs used for this research died within three months.*

¹⁰ *The latter option will be more available in the near future (see discussion of dichlorvos).*

¹¹ *Specifications for temperature and time have not been confirmed by research.*

¹² *Research has not been performed on this strategy.*

[†] = source has undergone peer review

[‡] = source is not peer reviewed

Cons

Petroleum jelly is messy and could damage surfaces on which it is left. In addition, any break in the barrier would significantly reduce the chance of it working. We do not know the specifications for the width and height of an effective barrier. One staff member at a shelter in Pennsylvania (see Case Studies) said that when they used this strategy (around bed legs) bed bugs were found stuck in the petroleum jelly (see Case Studies section). It is unclear whether the barrier discourages the bed bugs, traps them, or simply catches an unlucky few that don't make it across.

Recommendations

This practice is popular on discussion boards, but professionals do not include it in their control programs. When possible, residents should use more vetted barriers such as interceptors.

3.5 Metal Furniture

Pros

Bed bugs can travel on metal and plastic, but not as well as on wood, cloth, or other rough surfaces. Loudon at the University of California-Irvine analyzed the movement of bed bugs on different surfaces and found that bed bugs slip often and struggle to move forward on plastic and glass, even on a horizontal surface. The links between metal and bed bug behavior need research. The greatest benefit of metal furniture is that it often has fewer locations where bed bugs can hide compared to wood or wicker. If a piece of metal furniture does have gaps through which a bed bug could crawl to find harborage, the resident should seal up the gaps. Smooth surfaces and lack of hiding places makes inspection and treatment easier.

Cons

If residents do not keep the metal clean, rust-free, with holes sealed, bed bugs will be able to travel on the surface as easily as they would on wood.

Recommendations

Because early detection is the goal of a proactive bed bug program, management could advise residents purchase metal furniture. Plastic furniture may also help prevent

bed bug movement on to furniture because of the slippery surfaces. Regardless of construction material, residents should avoid purchasing complex platform beds (such as captains' beds). The staff at a homeless shelter that successfully eliminated bed bugs stated that replacing all of their existing furniture with metal furniture was one of the most essential parts of the process. See the Case Studies section for the shelter's procedure.

3.6 Cleaners

Pros

By cleaning up blood spots on infested furniture, PMPs can help provide the most sanitary living conditions possible and detect new evidence of bed bugs. In the process of removing blood spots, the PMP can also distinguish between cockroach frass and bed bug blood spots. The latter will smear reddish-brown before washing away. Although PMPs do not consider it a control method per se, keeping objects clean will help with early detection and treatment.

Cons

A solution of isopropyl alcohol will kill bed bugs (Harrison and Lawrence, 2009[†] and sanitize the area, but no research has been done on its efficacy. Since isopropyl alcohol does not have an EPA pesticide label listing bed bugs, users should check with their state's pesticide program before recommending its use.

Recommendations

Cleaning with soap and water should be used as a supplement to control methods when an infested item requires special care. This cleaning will remove bed bugs and eggs, but not necessarily kill them. The key to this control is detail-oriented cleaning; simply dousing an area with soapy water will not control bed bugs. Soap and water should only be used where electrical shock is not an issue and where water damage cannot occur to cleaned surfaces including electrical and electronic equipment.

[†]= source has undergone peer review

*= source is not peer reviewed

3.7 Laundry

Pros

Laundering is probably the best bed bug control method when evaluating options in terms of both practicality and effectiveness. The heat in a clothes dryer is extremely effective at killing bed bugs and eggs. Clothes dryers are accessible to almost everyone. Dissolvable laundry bags are recommended for transporting infested items to the laundry room.

Cons

Laundering takes time and (unless the machines are in the home) can be expensive. Some items cannot be laundered. There is also potential for disrupting the bed bugs if residents launder everything before consulting a PMP. When management recommends laundry, the resident needs to understand they cannot transport the laundry to and from the infested area in the same container.

Recommendations

Ideally the resident, PMP, or preparation contractor will:

1. Take all fabrics to the laundry room (or facility) in dissolvable bags (bags that dissolve in the wash such as Green Clean Dissolvable Laundry Bags).
2. Wash them using the hottest setting the fabric can stand.
3. Dry them for a full cycle on the hottest setting that the fabric can stand.
4. Place them in a new clean plastic sealed bag to prevent re-infestation of the items. To optimize effectiveness of treatment, residents should keep all but essential items in the sealed bags for as long as practical or at least during the treatment period.

While this is an ideal plan (because it almost guarantees that bed bugs will not be in or on fabric), laundering every fabric item in a home is rarely a practical recommendation. In most cases, this extensive work is not even necessary for bed bug control. After doing an initial inspection and treatment, the PMP should make

site-specific recommendations for what residents need to launder¹³. Residents can avoid the possibility of re-infestation by using dissolvable bags, transporting clothes in cloth bags that get washed with the clothes, or using two sets of bags (preferably different colors) for infested and clean items¹⁴.

What is the most practical recommendation for using laundering to kill bed bugs? Residents should take fabrics the PMP determines need laundering to the facility in one bag, place items directly into a dryer, run the dryer on the hottest cycle for 30 minutes (or a full cycle at a lower heat setting if high heat will damage the fabric), and bring items home in a bed bug-free bag. Note that this recommendation does not involve washing and that fabric put into the dryer is already dry. This is effective for killing bed bugs, minimizes cost and time, and can usually be done with dry clean-only items¹⁵.

3.8 Steam

Pros

Steam kills bed bugs and eggs with a short period of exposure and leaves no chemical residue. The user moves the nozzle over the bed bugs at a rate of 20 seconds per linear foot. Where PMPs can't use pesticides, steam is invaluable. Steam is less costly than dry heat or fumigation which achieve the same results, but are generally used on a larger scale.

¹³ In the article, "The Business of Bed Bugs," Michael Potter reports on a survey conducted with PMPs from across the country. He asked, "Which of the following methods do you routinely use to control bed bugs?" and 86% had their clients launder clothes (Potter, 2008a[†]).

¹⁴ One PMP alleviated some worry about infested laundromats. He believes lack of infestation at these sites (in his experience, with his clients) is due in part to the fact that they are so well lit and he applies insecticide dust to the underside of the tables. He does warn laundromat owners about allowing people to store bags of clothes in the facility overnight.

¹⁵ If using a dry cleaner, residents need to take precautions to avoid spreading bed bugs to the facility (Kells, 2006 b[†] & c[‡]).

[†] = source has undergone peer review

[‡] = source is not peer reviewed

Cons

Faults with steam are that it does not penetrate materials very deeply and if applied with too much pressure may blow bed bugs away. Steam treatment leaves moisture behind that may damage treated surfaces that must dry. Steam may damage materials and can conduct electricity¹⁶. One PMP indicated that it is best to use a "dry" steam unit (one that produces 5% or less moisture). Steaming has no residual effect.

Recommendations

PMPs have found that an upholstery nozzle wrapped in a piece of fabric diffuses the pressurized air so that bed bugs are not blown from the treatment area. Although lack of residual is a downside of steaming, most professionals admit they don't rely on the action of residual products much anyway. In an ideal world, the PMP would use steam to kill each bed bug seen during inspection and a thorough steam treatment would be the source of initial population knock down¹⁷. This is not the common practice because steaming takes a long time. Many companies make steam units available to their PMPs, but few PMPs routinely use them as part of their standard bed bug service¹⁸.

¹⁶ Experts advise PMPs steam items with low moisture, "dry" steam using a commercial unit and a floor/upholstery attachment (Harrison and Lawrence, 2009[†]; Kells, 2006 b[†] & c[‡]; and Miller, 2009[†]).

¹⁷ The only study with steam as a variable was not peer-reviewed, but the observed results were promising. PMPs treated one hotel with conventional techniques using dust material under the carpet at the floor/wall junction and in the wall voids. PMPs treated the mattresses per the pesticide label directions with a liquid residual and encased them. PMPs treated the second hotel with residual dust materials in the same fashion as the first, but they treated the mattress and box spring with steam instead of pesticide. The PMP monitored for recurrences. In both hotels, the bed bug population crashed after 60 days. Within 90 days, the company received call-backs from the first hotel. The second hotel remained controlled for the duration of the monitored time (12-plus months) (Meek, 2003[†]).

¹⁸ In the article "The Business of Bed Bugs," Michael Potter reports on a survey done with PMPs from across the country. He asked, "Which of the following methods do you routinely use to control bed bugs?" Of PMPs surveyed, 25% used steamers (Potter, 2008a[†]).

[†] = source has undergone peer review

[‡] = source is not peer reviewed

3.9 Mattresses and Box Spring Encasements

Pros

Mattress and box spring encasements simplify the habitat around the bed. From the perspective of a bed bug, a mattress and (even more so) a box spring offers endless locations to hide and wait until the next meal, especially if there is a hole in the fabric. Encasements eliminate hiding spots and make it easier to detect an infestation early on. They make the daunting task of eliminating a bed bug infestation a little bit easier. When encasements are used, the PMP does not need to use pesticides on the bedding. Since there are many concerns with using pesticides on bedding, encasements are an invaluable control tool. An added benefit comes to residents with asthma from using encasements because encasements limit exposure to dust mites.

Cons

Mattress and box spring encasements generally cost more than \$50. This cost is prohibitive for many low-income residents¹⁹. To be used for control, the encasement must remain on and intact for over a year to ensure starvation of all trapped bed bugs²⁰. Cheaper mattress covers, such as those made of vinyl, can be uncomfortable and usually rip before a year. Cover must fit snugly to avoid hiding places.

Recommendations

Both mattress and box spring encasements purchased for use in a bed bug program (including the early detection part of a program) should be both escape-proof and rip-resistant. Where most products fail is in their being escape-proof. The zipper area is the common site of



escape. At this time, two encasements recommended by experts are Protect-A-Bed and ActiveGuard™. Before purchasing mattress encasements, consumers should make sure the product has been tested with bed bugs. Based on observation and opinion, quality mattress encasements on both the box spring and mattress are an essential part of bed bug control.

Ideally, when a bed bug infestation is discovered, encasements would be put on the box spring and mattress immediately after the first visit by the PMP. Shelters, hotels, and multifamily housing with high turnover rates should consider encasements before a problem arises to help with early detection. The reality is, the majority of residents in low-income housing will not be able to afford encasements. Managers may need to be creative and find supplemental funding for the purchase of encasements for low-income residents. Box springs are structurally more complex and more difficult to treat than are mattresses, so if only one encasement can be purchased, the box springs should be encased.

Experts rarely mention pesticide-impregnated mattress liners. Liners do not encase the mattress. The main concern with these is that, in theory, they will expedite the already-evolving problem of resistance in bed bug populations. Secondly, residents would be in close contact with pesticides as they sleep which raises health concerns. Because of the resistance concerns, if the PMP recommends a pesticide-impregnated liner for a control effort, someone should remove and replace it with an untreated liner after the bed bugs die. Without overlooking the risks of exposure implicit any time a person is near pesticides, PMPs should consider pesticide-impregnated mattress liners where the bed bug population is susceptible

¹⁹ Wang et al. used mattress encasements as part of their IPM treatment, but as part of every IPM treatment, not a variable (Wang et al., 2009a[†]). The mattress encasements, along with time spent steaming, were the costliest components of their control program.

²⁰ Personal communication regarding unpublished research by Andrea Polaneo out of the Miller lab at Virginia Tech has shown that starved bed bugs die faster than previously thought. Whereas existing recommendations (based on old research) tout that bed bugs can live over a year without a meal, it seems modern bed bugs die within three months.

[†] = source has undergone peer review

^{*} = source is not peer reviewed

and either the resident wants to keep a heavily infested mattress or management wants to treat the mattress (or box spring) before transporting it to the garbage^{21†}. Before recommending the latter, industry needs research on how long these liners need to be in place in order to kill bed bugs.

3.10 Freezing

Pros

The two options for freezing are: place items in a freezer or use solid carbon dioxide (which is exempt from FIFRA registration requirements) to flash-freeze the bed bugs and eggs. Solid carbon dioxide is more commonly known as dry ice. One company that mainly offers non-chemical treatment options uses dry ice in a container for infested items that are sensitive to heat. Due to the lack of research and the variability of home freezer temperatures, this method cannot be recommended at this time.

Cons

The lack of penetration achieved with the frozen carbon dioxide method, along with the time and its expense, often dissuades companies from using it. Those who have tried the application marketed specifically for bed bugs also report that the solid carbon dioxide comes out at such a high rate that it often blows the bed bugs away rather than killing them. Steam is thought to be more effective, practical, and can be used in most of the same situations.

Using a freezer may fail for a number of reasons. The freezer will not be effective at killing the bugs if the item is not frozen to a sufficiently cold temperature for a long enough period of time. Current research has not been done to determine these thresholds.

^{21†} One PMP reported second-hand on a field study on pesticide-impregnated liners. The PMP who did the study replicated the results twice. For each, in the control infested unit he put mattress encasements on both the mattress and the box spring; in the treatment unit he put a pesticide encasement on the box spring and an untreated encasement on the mattress. The encasements were the only treatment used. One week later, in both trials, the units with the pesticide encasements had a few crawling bed bugs, but most were dead. The other units had bed bugs crawling all over the encasements.

† = source has undergone peer review

* = source is not peer reviewed

Recommendations

Time and temperature varies between freezing recommendations, but no peer-reviewed research exists that defines the correct temperature. One recommendation maintained by all is that the cooling has to be quick. If given time to adjust, bed bugs can survive extremely cold temperatures. Simply putting items outside in the winter won't work because an item may not cool to a killing temperature or a passer-by might pick up and bring it home.

If a prevention program uses public freezers, management needs to develop a communication and coordination system so that residents transport belongings in a way that minimizes the chance of spreading bed bugs. A chest freezer was used in the prevention efforts of a shelter described in the Case Studies section.

3.11 Vacuums

Pros

When trying to minimize pesticide exposure, vacuuming is preferable to contact pesticides as a way of eliminating bed bugs that the inspector spots. When the PMP removes bed bugs, the findings of his follow-up inspections are more relevant because the evidence is new.

Cons

"Normal vacuuming by clients is generally of little benefit in bed bug management because the bugs reside in places where housecleaning efforts normally do not reach" (Potter, 2006*). Experts' main concern with vacuuming is that it does not reliably get the eggs. Whoever is vacuuming must take precautions to avoid re-infestation from live bed bugs in the vacuum.

Recommendations

Where vacuums may realistically play a role in bed bug control is during a PMP's inspection which should be done at each visit. As with cockroach control, use of a HEPA vacuum to suck up any insects found upon inspection is recommended from the perspective of pesticide use reduction. Steam will have a greater impact on eggs (than vacuuming or most pesticides), but steam doesn't remove the evidence.

Cleaning contractors who use the same vacuum throughout a building should know to look for bed bugs. They can help detect infestations early and the knowledge will help them prevent spreading bed bugs. Experts recommend using a vacuum with a removable bag and putting talcum powder or insecticidal dust in the bag according to the label instructions. See Section 5.3 for a discussion of insecticidal dusts.

3.12 Ambient Heat Treatments

Pros

Ambient heat treatments use fans and a heat source to heat a space to 130°F to 140°F and hold that temperature for a sufficient enough time to heat all areas within the space to 120°F²². These treatments are popular for scenarios where unit preparation cannot (or will not) be done. Clients who do not want the PMP to use pesticides will usually opt for a heat treatment. This chemical-free control method can either provide complete control, or significant knock down depending on the quality of preparation and treatment.

Cons

Although the process of heating a space sounds simple, companies are learning the hard way that ambient heat treatments can fail in a number of ways. Most failures come from an area not reaching 120°F. PMPs must open drawers and peel carpet away from baseboards, as they are two areas that often fail to reach 120°F. Someone must prepare the unit to minimize areas of insulation (such as piles of fabric) and heat sinks where the heat can escape. Because the PMPs need to be in the unit rearranging fans and heaters anyway, they can do the necessary preparation with a resident's permission. Southern companies who have been using heat treatments for termites and cockroaches can be mentors for Northern companies who are new to the technology

²² Heaters have been shown to work to heat a home to 130°F, killing all bed bugs and eggs exposed to the heat for three hours (Getty et al., 2008[†]).

[†] = source has undergone peer review

[‡] = source is not peer reviewed

and don't know about building variables associated with heat treatments.

Recommendations

PMPs may choose to heat up a whole room or heat items contained in an insulated compartment (see Pereira et al. 2009[†] for a description of a compartment for heating). Containing items in an insulated area has great potential because it may be more cost effective than heating an entire unit. In this treatment, a group of items is isolated in the unit with an insulated five-sided box²³. Heaters raise the temperature in the box while the PMP treats the surrounding unit.

Propane, infrared, and electric (usually from a generator) are all options for heat sources. Each has its limitations, especially for use in a multifamily building. Propane-powered heaters generate large volumes of heated air blown in through flexible ducts from outside the building. While propane heaters are efficient, they are not always able to force hot air to the upper levels of multi-story buildings (Potter et al., 2008a[‡]) and may not be allowed by local housing codes. All have potential to work, but the PMP has to regulate heat throughout the space using thermometers and fans. A PMP must be on hand during the entire course of the heat treatment to monitor temperatures and make adjustments, as necessary. As with all bed bug control efforts, a system must be in place for preventing re-infestation after treatment.

²³ Among all heat-treatment trials where an insulated box was placed over objects on the unit floor and the contents heated, those in rooms with carpeted floors produced lethal temperatures for the bed bugs in the shortest times (2.4-3.1 hours), compared with treatment times between 4.9 and 7.3 hours for rooms with tile floors. Temperatures at different locations within the treatment envelope varied depending on the position of the heaters and fans, amount of furniture and other materials within the envelope being heat-treated, and level of insulation between the temperature monitor and the heated air inside the treatment envelope. In order for heat to penetrate all objects in the compartment in the shortest amount of time, heaters must be placed at opposite corners of the treatment envelope and fans placed so that the circulation of heated air is maximized (Pereira et al., 2009[†]).

If the landlord is responsible for re-housing residents displaced for treatment, the total treatment time is an important consideration²⁴. One housing authority switched from infrared heaters to heaters that are wired into the electrical panel because infrared heating took too long to heat up the entire unit. Heat works, if done correctly, but management should consider the factors tied to each method of heat treatment (such as expense for personnel, carbon monoxide poisoning, and local codes pertaining to propane) before investing.

3.13 Ineffective Non-Chemical Alternatives

3.13.1 Increasing Heat in the Infested Area with a Thermostat

Pest control companies that supply preparation instructions before determining the extent of the infestation sometimes have this as part of the protocol. They rationalize that increased heat will increase the activity of bed bugs and thus have them walk over pesticide residuals. No research exists that determines whether this increases treatment success, but research has shown that dry residuals of most liquid pesticides are not effective at killing bed bugs. Increased heat will dry the liquid pesticide products faster. This recommendation should not be used in the preparation instructions for a bed bug treatment.

3.13.2 Putting Items in Black Plastic Bags and Leaving Them in the Sun for a Day

In one study, the maximum-recorded temperature on the upper (sun-exposed) sides of mattresses placed in black plastic in the sun was 185°F, whereas lower side temperatures for the thick mattress never exceeded 95°F. Since bed bugs need to be exposed to temperatures above 100°F for an extended period of time to be killed, and because areas of sub-lethal temperature exist within

the bed at any given time, this technique seems to be not suitable for bed bug management (Doggett et al., 2006[†]).

4. Unit Preparation

Proper preparation makes a treatment successful. Even with the best preparation, bed bug treatments will fail if management doesn't hire an experienced company. Property management can use the following process to minimize inconvenience for the resident and property staff while maximizing the chance that the PMP's efforts will be effective:

1. A pest control company receives a call to do a bed bug treatment.
2. The company gives instructions to the property manager requesting the residents of the reportedly infested unit and units adjacent to the infested unit to clean and organize the room as they would for a housekeeping inspection. No further preparation is required so that the infestation is not disrupted before the PMP has a chance to evaluate the situation. This also minimizes the burden of unnecessary preparation. With this plan of action the PMP does not depend on management to pass on crucial information about extensive unit preparation to the resident. The manager then delivers the instructions by hand.
3. One or two PMPs (accompanied by property management or maintenance) visit the unit equipped to do a treatment (whether that be with pesticides, steam, vacuum, monitors, or a combination thereof).
 - a. First, they perform a thorough inspection of the infested unit and adjacent units to identify the extent of the infestation. If a bed bug is found, they use the least toxic option to kill and remove the bed bug. As the inspection is done, every effort should be made to educate both the resident and the accompanying staff person.
 - b. Once the thorough inspection is complete, the PMP has two options:
 - i. Not treat, give site-specific preparation instructions, and schedule the next treatment.

²⁴ PMPs need to consider the rate of heating since some items (such as wood laminates) run a greater risk of damage if heated too quickly. No faster than 15°F per hour is recommended (Potter et al., 2008a[†]).

[†] = source has undergone peer review

[‡] = source is not peer reviewed

PMPs should choose this option when there is extensive clutter or a widespread infestation. Preparation instructions will include laundering, installing mattress encasements, and organizing clutter. Resident cooperation is key to clutter reduction. For a discussion of this, see the Solutions for Compliance section.

- ii. Perform an initial treatment, give site-specific follow-up instructions (which may be as simple as installing a mattress encasement and keeping the bed isolated from the rest of the room), and schedule the next visit. PMPs should choose this option when the infestation is light or if the room does not have much clutter.
4. The PMP returns for a follow-up inspection and possible treatment in the units where he found bed bugs. This treatment may be more extensive (in terms of PMP time and tools used) than the first if he left site-specific preparation instructions. Alternatively, it may simply be an inspection if the initial inspection and treatment was thorough. The timing will depend on what the PMP did during the first visit. If the first visit was a full treatment, the follow-up should be two to three weeks later.

5. Pesticides

Pros

In general, the message coming from pest control experts is that if you can find bed bugs, you can kill them with a pesticide. Although nontoxic options exist that are equally or more effective than pesticides, PMPs usually use pesticides because they can be a quicker and cheaper way to eliminate bed bugs. All of the active ingredients below are either labeled for bed bugs or are in the process of having the label revised (by EPA) to include bed bugs.

Cons

Bed bug resistance to pesticides is well documented, and the levels of resistance vary between populations. Despite resistance concerns, none of the PMPs interviewed thought it factored in to why their control efforts failed. PMPs plan their chemical treatments so that they don't

rely too heavily on residuals and they are constantly on the lookout for bed bugs that are so resistant that a direct spray does not kill them.

Total release foggers are detrimental to bed bug control. Setting off one of these “bug bombs” does not kill most bed bugs, and significantly increases their migration. PMPs attribute bed bugs moving into adjacent rooms to the use of foggers. In a number of cases, residents' use of foggers disrupts the bed bugs before the PMP gets involved and they (like any pesticide) can be unsafe if the residents don't follow the label instructions.

Recommendations

The key is to involve an experienced PMP who will find as many bed bugs as possible before he treats. Pesticides should only be used for bed bug treatment by a licensed applicator. Pest control companies need continuing education and special certification options to help ensure that their PMPs do a thorough job.

Before trying an all-pesticide control plan, managers should seriously weigh all options in terms of probability of success given the conditions and people in the area. When there is lack of cooperation from people involved, resistance to products, or a PMP with limited experience, multiple pesticide treatments may be unsuccessful. An alternative control plan may be faster and cheaper in the long run.

The majority of PMPs chooses pesticides carefully and applies them judiciously based on the factors present in each infestation. Some residents and landlords use pesticides ineffectively—and even illegally. Experts warn against pesticide application by unlicensed and inexperienced individuals because of the potential for disrupting the bed bugs and making the problem worse. There is no silver bullet for bed bug control. For more general pesticide questions not addressed in this paper, contact the National Pesticide Information Center at <http://npic.orst.edu/> or by calling 1-800-858-7378.

5.1 Pyrethroids

Pyrethroids are the principal category of chemical pesticides used for bed bug control, despite research that regularly finds bed bug resistance to pyrethroids²⁵. PMPs are using pyrethroids for the majority of their treatments because only a few other chemistries exist that can be legally used for bed bugs and PMPs report that pyrethroid products do quickly kill bed bugs coming in contact with the pesticide while it is still wet²⁶. Once the liquid pesticide is dry, it usually won't be effective for control and may contribute to resistance. Most companies are not depending on pyrethroids for ovicidal properties, but unpublished tests show that some of the contact products labeled for use on mattresses will kill eggs. PMPs reported no major differences between pyrethroid products in the field²⁷.

5.1.1 D-Phenothrin with an Alcohol

This product provided control when used to reduce a population of bed bugs on a mattress. There is no residue, so efficacy is based on thoroughness of application (Moore and Miller, 2008[†], Romero et al., 2007b[‡]). These products also kill eggs on contact (Pinto et al., 2007[†]).

5.1.2 Permethrin (synthetic)

An agricultural study showed insecticide with permethrin worked as a contact insecticide at low concentrations but exhibited residual activity only on metal and wood (not cardboard, cotton cloth, or cotton-polyester blend) (Fletcher and Axtell, 1993[†]). These findings are at odds with the reported efficacy of permethrin-impregnated mattress liners marketed for residual control. These

²⁵ In addition to the usual process of resistant population development due to selection, cross-resistance may be at play (Romero et al., 2007a[†] & b[‡]; Yoon et al., 2008[†]).

²⁶ Pyrethroid-based products gave good (>60 percent) residual control, but mortality was not 100 percent in a study done by Todd. No contact pyrethroid products tested by Todd exhibited significant flushing action, but did give fair knockdown and good kill (Todd, 2006[†]).

²⁷ In their 2006 study, Moore and Miller found that pyrethroids work faster than chlorfenapyr. In terms of LT50, the order (fastest to slowest) was: lambda-cyhalothrin, bifenthrin, deltamethrin, and then permethrin (Moore and Miller, 2006[†]).

[†] = source has undergone peer review

[‡] = source is not peer reviewed

insecticidal liners are tested (see Ballard, 2008[‡]; Snell, 2008[†]), but peer-reviewed, published research does not exist. A study using Olyset net (a polyethylene net used mainly for mosquito control with two percent permethrin incorporated within fibers) found only 25 percent mortality after 24 hours when the bed bugs crawled on the net for 30 minutes (Sharma et al., 2006[†]).

5.1.3 Beta-Cyfluthrin

Research by Miller found resistance to beta-cyfluthrin, but the researchers used a product with cyfluthrin along with deltamethrin and hydroprene to reduce a bed bug infestation successfully by 95 percent. Although the control was not 100 percent, in situations where clutter and lack of resident cooperation severely hinders treatment, 95 percent is a considerable improvement. Moore and Miller attribute the success to the thoroughness of the applicators more than the residual toxicity of the product (Miller, 2009[‡]; Moore and Miller, 2008[†]).

5.1.4 Deltamethrin

As with other pyrethroids, researchers find resistance in field-collected populations to deltamethrin, particularly the dry residues. Two studies found that bed bugs avoided areas treated with deltamethrin. When there was an attractant on the other side of a treated strip or the treated area had bed bug eggs and feces, bed bugs readily traveled through the product (Haynes et al., 2008[‡]; Romero et al., 2009a[†]). In the study done by Romero et al., deltamethrin caused low mortality and increased activity, which could lead to increased exposure or migration to a new location (Romero et al., 2009a[†]). In contrast, Moore and Miller found that deltamethrin was not repellent (Moore and Miller, 2006[†]).

5.1.5 Lambda-Cyhalothrin

On susceptible populations lambda-cyhalothrin is the fastest acting of the pyrethroid active ingredients (Moore and Miller, 2006[†]). An agricultural product containing lambda-cyhalothrin was active at low concentrations on all surfaces and exhibited relatively long-lasting residual activity (12 weeks) on wood, cardboard, metal, cotton cloth, and cotton-polyester blend, with the shortest residual life on metal (Fletcher and Axtell, 1993[†]). Researchers find resistance in the lab, but the products still perform in the field.

5.2 Chlorfenapyr

This pyrrole is the main alternative chemistry to pyrethroids. PMPs use it as a nonrepellent residual and are reporting success, but it may take more than a week^{28,29,30}. As with pyrethroids, PMPs are not relying heavily on the residual provided by chlorfenapyr-containing products. The experience with pyrethroids shook the industry's trust in all liquid residual products for bed bugs. In addition to its residual potential, this pesticide also kills eggs. As with any treatment, a professional follow-up inspection and possible retreatment is necessary.

5.3 Dusts

Sometimes boric acid is mistakenly used for bed bug control. Boric acid is commonly used for cockroaches. The powder is abrasive to the insect's cuticle, but the main mode of action is as a stomach poison. Bed bugs would have to ingest this stomach poison for it to be effective, and since they only suck blood, this will not happen. Residents and PMPs should not use boric acid for bed bug control.

There are three active ingredients in insecticidal dusts available for bed bug control. These are pyrethroids, diatomaceous earth, and limestone. Diatomaceous earth and pyrethroid dusts have the best reputation. PMPs use both as dependable residuals. When the user applies it according to label directions pyrethroid dust remains effective as a residual

(whereas liquid pyrethroid sprays don't). The pyrethroid in the dust does not break down readily in dark hidden areas where it isn't exposed to UV light or cleaning products and remains effective for many weeks.

As with any bed bug control method, the key to success is in the user. Of all treatment options, dusts are most often incorrectly employed. This jeopardizes the success of the overall treatment. As always, experts advise all users to read the labels and to adhere strictly to the manufacturer's instructions for each product.

5.3.1 Silica with Pyrethrins

Benoit et al. found pyrethroid-containing silica dusts to be more effective (higher water loss after 10 minutes of exposure) than diatomaceous earth. One study showed that an addition of pheromone to the dust increased activity over silica dust, enhancing its efficacy (Benoit et al., 2009[†]). No dusts with an attractant are commercially available, but the topic deserves further research.

5.3.2 Diatomaceous Earth (DE)

Diatomaceous earth takes up to two weeks to kill bed bugs. This is too long for most residents to wait to see the effects of the PMP's visit. PMPs use it as a backup to other faster products. Because of its mode of action, DE does kill resistant bed bugs, but it (and other dusts) can't be applied as widely as other products, and it takes some time to kill (Romero et al., 2007b[‡]; Benoit et al., 2009[†]).

5.3.3 Limestone

Most PMPs report that limestone dust is not very effective in the field; however, a few PMPs do think it works. Dust with limestone as the active ingredient killed only 20 percent of continuously exposed bed bugs after five days (Todd, 2006[‡]). Moore and Miller found that it took eight weeks to get high mortality using limestone dusts (Moore and Miller, 2008[†]).

5.4 Insect Growth Regulators (IGRs)

PMPs almost always use insect growth regulators in combination with other products when treating bed bugs. Although no obvious positive results of using IGRs have

²⁸ *Chlorfenapyr can take more than a week to kill bed bugs (Moore and Miller, 2006[†]; Haynes et al., 2008[‡]; Romero et al., 2007b[‡]) making it one of the slower-acting products. In one contrasting study, live bed bugs were treated directly with liquid and many died within three days (Moore and Miller, 2008[†]). Another study found that bed bugs exposed to chlorfenapyr mated and laid viable eggs (Moore and Miller, 2006[†]). Chlorfenapyr is not repellent (Haynes et al., 2008[‡]; Romero et al., 2009a[†]; Moore and Miller, 2006[†]).*

²⁹ *Wang et al. used it as the primary pesticide in an IPM study and found that it successfully reduced (but did not eliminate) populations (Wang et al., 2009a[†]).*

³⁰ *Using it along with other non-pyrethroids as the pesticides in a control effort may require the application of more active ingredient than if the PMP relied on pyrethroids (Moore and Miller, 2008[†]).*

[†] = source has undergone peer review

[‡] = source is not peer reviewed

been seen in the field, PMPs still use them because the risks are low and companies often want to try everything available. Two pest control companies went from using IGRs to not using IGRs without noticeable change in treatment efficacy. Researchers find that IGRs kill older nymphs, but not adults, and may significantly affect the mortality of nymphs hatched from the eggs of treated females.

No published research or observations report on IGRs being used alone to eliminate a bed bug infestation. Based on their actions on other insects, IGRs should cause water stress in bed bugs, prolong the juvenile stage, and affect the cuticle. Although IGRs have delayed effects, they could play a role in killing the few remaining bed bugs in treated locations.

5.4.1 Pyriproxifen

Boase found very substantial reduction in reproduction by female bed bugs exposed to the IGR pyriproxifen (Boase, 2001[†]), but PMPs are not using it for bed bug control.

5.4.2 Hydroprene

Hydroprene does not work on bed bugs with the same efficacy that it does with other insects. It does not delay molting, but once nymphs reached adulthood, many die. Some adults that survive produce offspring (Todd, 2006[†]; Miller, 2009[†]). Since PMPs apply hydroprene in combination with other products for bed bug control, it is hard to determine how much of a successful eradication is due to its effect. Despite its unconfirmed efficacy, 65 percent of PMPs questioned by Potter reported incorporating IGR into their spray treatments (Potter, 2008a[‡]).

5.5 Fumigation

5.5.1 Sulfuryl Fluoride

Fumigation is almost always prohibitively expensive, but it kills all life stages of bed bugs and can be a last-resort solution to a bed bug infestation³¹. In multifamily

³¹ *Fumigation with sulfuryl fluoride can be done either for a whole structure or within a compartment. It is expensive, but does provide 100 percent kill of both adults and eggs (Miller and Fisher, 2008[†]; Walker et al., 2008[†]).*

[†] = source has undergone peer review

[‡] = source is not peer reviewed

settings, property managers usually have PMPs perform offsite container fumigation (as opposed to whole-building). Compartment treatments can be cost effective when combined with other treatments for the items not fumigated. Whole-building fumigation is rarely an option for multifamily housing because, in addition to the expense of the treatment, management may be left with the expense of finding alternative housing for their residents during treatment.

Hiring a qualified and experienced PMP to perform the fumigation is important. It is a risky treatment. Procedures for minimizing resident exposure to residual chemicals and preventing re-infestation of bed bugs must be in place before undertaking fumigation. See the Case Studies section to read how a shelter used fumigation as part of their control effort.

5.5.2 Dichlorvos

Small-scale fumigation using the organophosphate dichlorvos is currently in limited use, but it has great potential for effectiveness (and misuse). These treatments are effective for items that can be contained for two or three days in a plastic bag or container. Ideally this chemical would be used only as a last resort, when other less toxic options cannot do the job.

Potential for misuse of this highly toxic chemical includes using more than necessary in a given area, and using it as an area-wide treatment (such as using the product under a bed). PMPs observe this misuse in the field. Retailers must stress that the user follow the label directions.

5.6 Essential Oils

There is no published peer-reviewed research on the effectiveness of these chemistries on bed bugs. Many of them are exempt from FIFRA registration under Section 25b. PMPs who use the botanical-based EcoSmart line of pesticides report that they are effective at killing on contact.

5.7 Chemistries Being Registered for Bed Bugs

In addition to the dichlorvos mentioned above, EPA is in the process of re-registering a few products for bed bugs. These chemistries are welcome additions to the limited options available now. None will be a silver bullet, but having alternatives to pyrethroids will better arm PMPs to battle bed bugs.

5.7.1 Acetamiprid (with Bifenthrin)

Data from preliminary university testing shows that this neonicotinoid insecticide is effective as a residual. It comes in various formulations, but the wettable powder seems to be the most effective. It may also be a repellent. PMPs use repellent products on the outer perimeter of an infestation to drive the bed bugs into an area treated with a non-repellent residual.

5.7.2 Imidacloprid (with Beta-Cyfluthrin)

Data from preliminary university testing shows that this neonicotinoid insecticide is effective as a residual.

5.7.3 Indoxacarb

PMPs expect products with this oxadiazine active ingredient to have bed bugs added to their label.

5.7.4 Dinotefuran

Expect to see more research on and use of this guanidine insecticide in the upcoming year.

5.7.5 Propoxur

At the request of more than 12 states, EPA is considering adding bed bugs to the label of this carbamate. University of Kentucky tests show propoxur residual kills bed bugs more consistently than other pesticides currently available, so it could potentially be a useful option for battling bad infestations.

Case Studies

1. Pennsylvania Homeless Shelter: Procedure for Complete Elimination

A homeless shelter in Pennsylvania had two options—solve their bed bug problem or have the program shut down by the health department. To avoid losing the community resource and having bed bugs spread to other low-income housing when the residents moved, the shelter staff (in cooperation with the residents and a pest control contractor) took on the challenge of eliminating bed bugs on the property. The shelter consists of three townhouses connected by shared walls. Thirty-nine people lived in 12 bedrooms within the townhouses at the time of treatment. To prevent re-infestation, property management developed protocols for admitting new residents. Their bed bug elimination program was successful.

1.1 What Didn't Work

Prior to embarking on the program that eventually succeeded in eliminating bed bugs, the shelter tried to eliminate bed bugs using their PMPs and partial resident cooperation. The PMPs inspected, applied pesticides, and vacuumed and steamed each unit's mattresses, curtains, dressers, and bed frames. Management asked residents to keep all clothes and personal belongings in plastic totes (which management provided) and do laundry as much as possible. Management also provided mattress encasements and made a chest freezer available for all resident belongings that a dryer would damage.

Although the PMPs did their part, resident cooperation was not sufficient to knock down the population of bed bugs property-wide. Residents did not keep their belongings in the totes, they tore mattress covers and never replaced them, and the freezer had a limited capacity. Management spent significant time and money

and the PMP applied a large quantity of pesticides during these unsuccessful efforts.

1.2 What Worked

Management weighed the options available for complete elimination. Tenting and fumigating the entire building would have cost \$80,000. The alternative plan, described below, cost \$32,000 (including expenses for all control methods employed).

The effort began with a series of five daily meetings that management required all 39 residents to attend. Representatives presented specific aspects of bed bug control from the perspectives of the health department, shelter staff, pest control company, and shelter management. The fifth meeting was a question-and-answer session. Inevitably, not all residents made all five meetings, but by the end of the week every person knew the plan of action for the treatment and his or her responsibilities.

On the day of elimination, all residents received boxes into which they put all of their belongings. The PMP took the boxes and put them into an 18' truck for offsite fumigation. Only wooden and upholstered furniture remained in the townhouses. Shelter staff wrapped all the furniture (including mattresses) in plastic and immediately took items to an incinerator. Meanwhile, the PMPs inspected and thoroughly treated the now-empty rooms during a four-hour window. After treatment, staff brought in new furniture to re-furnish the rooms and applied petroleum jelly around the bottom of each of the bed and couch legs. All new furniture was metal or plastic-coated fabric. Although the new furniture looked institutional, shelter staff attributes much of the success of the program to the furniture's metal construction. Immediately after the 24-hour control program, staff found bed bugs stuck in the petroleum jelly, but by the time of the PMP's follow-up, no live bed bugs were detected.

During this four-hour period of time, residents brought one bag with clothes they would need for the day to a laundromat that the shelter had rented for the day. Residents washed and dried their clothes, put them in news bags, and returned to the shelter. After the 24-hour fumigation, the PMPs returned all belongings and the residents restocked their homes.

To maintain this level of control, procedures are strictly followed for the coming and going of people and their belongings. Every person who comes to stay at the property must wash and dry all items that can be laundered (in the shelter's machines) and place non-washables in the chest freezer for 48 hours. The shelter still provides plastic totes to the residents, but this is more of a precaution than an essential part of control. Since the turnover of people is only about one person per day, a single freezer and one washer and dryer set are sufficient. The PMP comes regularly and thoroughly inspects (including the undersides of drawers and behind electrical outlet plates).

2. Massachusetts Housing Authority: Preventing Spread during Renovation

Since a significant amount of economic stimulus funding has been directed towards renovation projects in low-income housing, it is worth mentioning the procedure used by one housing authority for residents who have to be relocated during renovation.

The housing authority has a contract that includes pest control with a relocation company. Four weeks before a resident move-out, the relocation company inspects the resident's home. If bed bugs are found, the relocation company hires a PMP to treat. If the PMP requests that the residents launder potentially infested clothing,, the housing authority provides tenants with dissolvable bags.

Each temporary housing location has an onsite dryer dedicated to bed bug prevention. Incoming residents must put fabrics in the dryer for 30 minutes before they are allowed to move into their temporary home. In addition,

interceptor monitors are in place at the temporary site so that staff can detect infestations and deal with them early. Each temporary unit has a seven day vacancy in between occupancies during which time the contractor cleans, inspects, and uses portable monitoring devices for bed bugs.

3. Oregon Section 8 Property: Reducing Incidences of Bed Bugs with Building-Wide Policies

In Oregon, property staff noticed a trend in a project-based Section 8 property with elderly/disabled residents: bed bug infestations. One staff member estimates that one-third of the building's units had bed bugs. Tenants and management were not cooperating with instructions from the PMP. Management did not understand why they couldn't rely on the PMP for the entirety of a bed bug control effort. Residents did not report bed bugs because they knew that they would be responsible for buying costly mattress encasements and possibly the PMP's services. This approach of PMP-only bed bug control did not work and the building-wide infestation level grew. With the goal of early detection and intervention based on a zero-tolerance for bed bugs, property management and the pest control company developed a new protocol.

The process for each bed bug infestation at the property is now:

1. The resident reports bed bugs to management.
2. A housing staff employee who has experience with bed bugs inspects and verifies the infestation visually.
3. The housing staff member develops a trusting relationship with the resident to determine what outside help the resident will need in order to do his or her part in pest control. The staff member prescribes individualized preparation instructions for the unit. (This is not left to the PMP because staff has become very experienced with the process and rationale of unit preparation.)

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4. Property management, social services, and residents work together to prepare the unit (all paid for by management). When residents can't or (sometimes) won't prepare, a contracted preparation team services the unit. The prep team does the physical work for preparation and reassembly of the room. The prep team personnel are educated about bed bugs and communicate well with the residents.
 5. The PMP treats the unit when (and only when) the resident or preparation team has fully prepared it.

Education of staff and residents helped them understand the pest and how to prevent it. Two of management's goals for education were to remove the stigma associated with bed bugs, and inform everyone of the procedure in place for bed bug control. Management encouraged education with written materials, group education (with translators if needed), and one-on-one interventions.

Education increased communication and invested everyone in the program.

Because early detection by residents and prompt intervention by the PMP is the ultimate goal of this program, management carries the financial burden associated with bed bug control (including preparation contractors and mattress encasements). This asset management is feasible from a business sense. Before, management was continuously paying for service that never fully eliminated the problem; now the costs associated with bed bug control are mostly upfront and do not occur very frequently. Under this strategy, in six months, number of treatments per week was reduced from an average of ten to less than one. What was once a building-wide infestation has been reduced to a few sites in need of treatment and surveillance.

Compliance Solutions

1. Options for Education

Three educational approaches used by management in affordable housing are:

- Community-wide distribution of educational materials;
- Training in group settings; and
- One-on-one communication.

The goal of education campaigns is to educate everyone working and living in a particular facility about both bed bugs and building-specific procedures for controlling them.

Trying to resolve isolated bed bug infestations reactively is neither sustainable nor effective. Management must motivate staff, residents, and contractors to do their part in the process—and they must be patient in enlisting this support. Management should base the building-wide plan on national models but keep site-specific factors in mind. As soon as there is a suspected bed bug infestation, management should act quickly and consider the control effort an urgent need.

Achieving a sustainable solution may require going outside of the building to the community, especially if re-infestation is occurring from a known reservoir in another building. Some experts suspect that housing complexes run by property management companies without a zero-tolerance policy for bed bugs are reservoirs for bed bugs that can lead to community-wide infestations. Communication, prevention, early intervention, and the integration of multiple control methods are the cornerstones of an effective bed bug control strategy.

1.1 Written Materials

Written materials can be distributed through monthly rent bill mailings, newsletters, move-in materials, postings in public places, and door-to-door delivery. Property managers should review leases, tenant

handbooks, housekeeping standards, and pest control policies to ensure these documents contain language articulating tenant and property management roles and responsibilities for pest control. Management should use unambiguous language to describe pests of concern and what constitutes an “infestation” residents must report to management. Documents should contain clear language about pest prevention and the requirement for tenant cooperation with PMPs. In addition to helping residents understand their responsibilities regarding pest management, such clear written language in leases and other key documents can be useful should enforcement action be required in the face of tenant non-compliance.

It is important that written materials be easily accessible to property managers, tenants, and any other parties who may need them. Currently, many property managers develop their own materials based on what they read online. There is a need for professionally developed written materials about bed bugs that communicate the major messages at a third-grade reading level or lower. Educational materials should be translated into a variety of languages as well as Braille. All-visual materials for illiterate populations should also be developed. Materials should communicate what residents should do if they think they or someone they know in the building has bed bugs. This may help in early detection.

1.2 Group Training

Training led by a bed bug expert in a group setting is the most time- and cost-effective way of educating, but only if the people whose participation is necessary to ensure program success are willing and able to attend the training. Unfortunately, it is often the residents that don’t attend such training session who are housing the reservoirs of bed bugs in a building. Nevertheless, group education is an excellent means for informing tenant advocates, social service workers, maintenance

staff, and management, and serves as a starting point for collaborative efforts to identify and resolve bed bug infestations. Moreover, holding group meetings is a clear demonstration of landlord support of the issue and may be a more comfortable environment than one-on-one interventions for people who are squeamish or ashamed.

Trainers use a combination of written materials, samples, and inspection exercises (using either a real or mock unit). Content should include where and how bed bugs live, nontoxic control measures, what to expect from a PMP, and what the procedures are for the building that hosts the training. If the attendees understand where and how bed bugs live, they are more likely to see the importance of recommendations for preparation made by the PMP. Almost all pest control companies are willing to lead group training at no additional charge. Management should schedule these sessions at various times (including the evening) to accommodate everyone's schedules. A bed bug-themed tenant council meeting is often effective as well. An excellent one-day training program for IPM in affordable housing, which includes a module on bed bugs, was developed jointly by EPA, CDC, HUD, USDA, the Northeastern Regional IPM Center, the National Center for Healthy Housing, NPMA, and Penn State University. This training can be viewed on-line at www.stoppests.org/ or www.healthyhomestraining.org/ipm/training.htm. For further information on this course, contact Allison Taisey at aat25@cornell.edu or Tom Neltner at tneltner@nchh.org.

1.3 One-on-One Education

One-on-one education is time intensive, but is the best for residents who have severe bed bug infestations in their homes. This form of education is more personal and involves a meaningful, personalized investment of time from both the trainer and the trainee. Trainers should attempt to determine how bed bugs began so that steps can be taken to avoid reinfestation during and after the treatments.

The person administering the one-on-one education must know about bed bug control and building-specific

procedures for pest control. Attending one of the group education sessions should be a minimum standard for those working one-on-one with residents. Management, maintenance, resident support services, the PMP, or outside agencies all have opportunities to educate residents when they visit a unit (whether it be for pest control or not). There is a great need for multilingual educators. Every door that opens should be seen as an opportunity for pest control education. The personnel *and* resources needed for one-on-one training should be available to communicate effectively with whoever is behind the door.

2. Solutions for Difficult Residents

2.1 Residents Who Can't

Those who provided input on this report suggested the following options for accommodating residents who can't prepare their homes for bed bug treatment. People in the pest control profession need to network with social service groups to identify other options available.

- Early in a bed bug control effort, identify residents who cannot do unit preparation so that support services can be employed.
- Contact the families of residents who are unable to prepare their homes to ask if they can dedicate time or money to the effort.
- Utilize social service agencies to help residents who do not have family to help.
- Have the PMP, building maintenance, or hired preparation contractor prepare the unit.
- When residents are hoarding, PMPs should try to make the bed an island and make as much of an impact as possible with contact treatments. Sustainable control will not be achieved without the help of a therapist.

2.2 Residents Who Won't

Those who gave input on this report suggested the following options for dealing with residents who refuse to prepare their homes for bed bug treatment. People in the pest control business may need to network with social services and law enforcement groups to identify other options available.

- Management gives notices requesting cooperation and detailing consequences.
- Management charges the resident for lack of compliance with PMP's instructions.
- Management proceeds to lease enforcement.
(Management should try to avoid eviction since the resident will likely both take the problem to the next residence and cause migration due to disruption during the moving process.)

Questions for Further Research

Researchers should strive to test every tool and active ingredient available for bed bug control as an independent variable. Ideally, studies would follow comparing efficacy of tools and products that can be used together in various types of infestations (e.g., different buildings and levels of infestation). In this way, peer-reviewed research can support PMPs' plans that involve multiple control methods. Questions posed for research are:

Inspections

- Which is more effective at identifying a light bed bug infestation in vacant units: dogs, sticky traps, moat-style interceptors, or portable monitors? In occupied units?
- What visual inspection procedure is most effective at detecting a light infestation when done by a non-professional?

Monitors

- Are interceptors more effective at monitoring for bed bugs than sticky traps?
- Which chemicals are most attractive as lures?

Unit Preparation

- What are design specifications for the furnishing and organization of a bedroom that is least conducive to bed bug infestations?
- What is the best way to work with residents who can't cooperate with pest control efforts?
- What is the best way to work with residents who won't cooperate with pest control efforts?
- What impact does metal furniture have on bed bug control efforts?

- What impact does the use of dissolvable bags have on the success of building-wide bed bug control efforts?
- What specific impact did laundering have on a successful bed bug control program?

Non-Chemical Treatment Methods

- What impact do mattress encasements have on a building-wide bed bug control program? (This research may also consider the fact that encasements help control dust mites.)
- How much of an impact can steam have on a population when compared to other non-residual treatments?
- What triggers the dispersal behavior of adult female bed bugs and how far do the (potentially fertilized) females travel?
- Which is more effective at killing bed bugs and eggs on upholstered furniture: steam or frozen carbon dioxide? (What is the penetrating ability of each of these?)
- What is the temperature of the freezer (household, deep, and container truck) and for how long must the item stay in the freezer to kill adult bed bugs and eggs if they are in the center of a bag full of fabric?
- Does petroleum jelly work as a barrier? If so, what is the width of the barrier needed to guarantee that bed bugs won't make it across?
- Does double-sided tape work as a barrier?

Pesticides

- At what threshold of clutter and infestation level should a PMP refuse to apply a chemical treatment?
- Do pheromone lures make insecticidal dusts more effective?

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- Do foggers or pesticide sprays interfere with the ability of bed bug detection canines to detect bed bugs?
 - Why is there a difference between pyrethroid efficacies in the lab versus the field?
 - How long do pesticide-impregnated encasements need to be in place in order to kill bed bugs and eggs trapped inside?

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Final Thoughts

The best-case scenario for dealing with bed bugs effectively and efficiently (complete elimination using minimum time and money) is when a resident reports an infestation early and management acts promptly based on established procedures that support a zero-tolerance policy for cockroaches, mice, rats, *and* bed bugs. All people living and working in the building must know of the zero-tolerance policy and everyone must understand his or her part. Bed bug infestations get out of hand when staff doesn't know about them, does not take action, does not communicate preparation instructions to residents, or residents do not comply either because they can't or won't.

Integrated pest management (IPM) is a reduced-risk approach to pest control that looks at pest problems as building-wide issues, rather than isolated incidents. An IPM program establishes procedures for preventing pest entry and limiting food, water, and shelter available to pests. When all members of the IPM Team (management, staff, contractors, and residents) know their role in pest management *before* a problem arises, a reported infestation (regardless of pest type) can be dealt with quickly. When residents understand that they will not be charged or penalized for reporting a pest infestation and that the building management and staff have committed to providing a pest-free home, they are more likely to report infestations before they get out of hand. An effective IPM program addresses all the reasons bed bug control efforts fail.

As part of their role in pest control, all members of the IPM Team should know to report cockroaches, mice, rats, or bed bugs as soon as one, or evidence of one, is seen through a pre-determined system. Communication is a large part of an effective IPM program. All members of the IPM team should be in communication about pest control issues and resolutions. Management will be able to hold everyone accountable for their part in pest control by using a building-specific work order system or IPM log to track problems from start to finish.

Resident compliance is not a bed bug-specific issue. Residents who don't comply with bed bug control efforts are probably the same residents who would not be doing their part in any IPM effort. It is worth repeating that these residents fall into two (very different) categories of *can't do their part in pest control* and *won't do their part in pest control*. Solutions need to be found for both of these groups. Solutions will come from experts outside of pest control. The IPM team must include legal and social service experts. Getting residents the support or motivation they need to do their part in pest control is an ongoing battle that must be fought with undiminished enthusiasm. A pest-free home is part of what makes a healthy home and *every* person deserves a healthy home.

Allison Taisey and Tom Neltner

Especially important in the approved ordinance:

- ① Having a safe on the premises....legally the money made by medical marijuana can't be deposited in banks AND
- ② That the marijuana be grown, packaged and labeled as GROWN IN MICHIGAN. (This is especially important to minimize the possibilities of it being transported illegally into the United States and Michigan.

It would also make it easier to back-track each particular strain or variety of cannabis/marijuana. That would protect the safety of the medical marijuana patients (if a recall is necessary) and, especially as it would minimize foreign or local incentive to tamper with or add other, unknown ingredients into the product sold.

submitted at meeting
2/12/16

THE NEW YORK TIMES, TUESDAY, MARCH 21, 2006

Marijuana and a Slower Mind and Body

Long-term heavy users of marijuana perform significantly worse on tests of mental agility and physical dexterity than short-term users or nonusers, even when they have abstained from smoking for more than 24 hours, new research shows.

Scientists, led by Lambros Messinis, a neuropsychologist at University Hospital in Petras, Greece, tested three groups.

They were 20 long-term users who had smoked four or more marijuana cigarettes a week for at least 10 years, 20 short-term users who had smoked a similar amount for 5 to 10 years and, finally, 24 people, representing a control group, who had used marijuana no more than 20 times in their lives and not in the prior two years.

The long- and short-term users were drawn from participants in a drug rehabilitation program.

Even after controlling for I.Q., other drug use, age, sex, depression and other variables, long-term users scored significantly lower than control group members and short-term users on tests of verbal fluency, memory and coordination.

The exercises included naming objects when shown pictures of them, thinking up words with the same initial letter, listening to lists of words and later recalling them and drawing lines in the proper order among numbers and letters randomly spread on paper.

The study appears in the March issue of *Neurology*.

Dr. Messinis acknowledged that the results might have differed with marijuana users from the general population. Still, he said, the study was carefully controlled, and frequent heavy use appeared to have significant negative effects on performance.

Need to get and keep the growing of marijuana out of private homes because of the increased possibility of crime, such as the terrible tragedy that ~~WILX~~

Lansing Men To Stand Trial On Murder Charges

Updated: Thu 7:39 PM, Mar 03, 2011 WILX.com

LANSING -- For the second straight day, 22-year-old Benjamin French and David Marion, Jr. appeared in court for their preliminary examination -- this time to hear the judge's decision that they will indeed go to trial.

²⁰¹⁰
The two Lansing-area natives are accused of killing 18-year-old Darren Brown, Jr. and 23-year-old Owen Goodenow last March 25 in Lansing. All four were friends.

"It was a Cal-Tech, 9 millimeter, semi-automatic handgun," said Det. Sgt. Thomas Declercq, from Michigan State Police, called on Thursday to testify about forensic evidence he's analyzed and a statement he took from French back in September.

That gun was a key piece of evidence released by the prosecution in hopes of establishing probable cause that Marion Jr. and French committed the murders.

The firearm belonged to Marion Jr.'s father, and the bullets that killed both the victims (and were recovered at the crime scene) came from that handgun, according to the prosecution.

Authorities say that statements given by French place that gun in Marion Jr.'s hands the day of the murders. Marion Jr.'s statements counter that French was the gunman, according to officials.

"[French] said they had planned it possibly a week," Declercq said Thursday, referring again to a confession he says he obtained from French.

And new details emerged at the hearing about what it is that authorities say those plans were. According to statements from both Marion Jr. and French, the two plotted to kill Goodenow and steal a safe in his bedroom, filled with drugs and about \$100,000.

"[French said] once the safe was opened, they would 'take' Owen Goodenow," Declercq testified. When asked what French had meant by 'take,' the detective responded, "They were going to kill him. They knew they were going to kill him when they pulled into the driveway."

Declercq says that when the defendants arrived at 3214 Glasgow on March 25, they also killed Brown Jr. and fled with the safe, which they later opened with a saw -- a saw that was found months later at French's residence.

The defense, meanwhile, suffered a defeat in the case. The judge ruled that he would allow a wire-tapped cell phone conversation between Marion Jr. and French (to which Marion Jr. had consented) as evidence in the trial, saying the FBI had both the jurisdiction and the authority to conduct it.

That conversation and subsequent statements from both French and Marion Jr. amount to what the prosecution would call confessions.

As for each defendant calling the other out as the gunman, the judge said it matters little -- an accomplice to the murders in this case is considered a killer just the same.

On those grounds, the judge declared Thursday there was probable cause to believe French and Marion Jr. committed the crimes, and bound them over to the circuit court for a trial.

They each face the same five charges -- two count of open murder; o

submitted at meeting 2/12/16

2-12-2016

If you need me to sign any of those submittals, let me know.

If any of you know of any State Committees who I could speak to regarding the loopholes and potential medical dangers (due to a person's medical history and/or potentially dangerous interactions with prescription drugs, for example.) Please inform me.

Also, a patient's medical & psychological history must be requested - ~~not~~ allowing a person to pick and choose medical conditions in order to "work the system" is not the intention of Medical Marijuana's use.

If and when ANY vote is taken in the City of Lansing, we need better enforcement of voter's freedom from interference. There were (I believe) serious violations to The Election Process: There were signs which stated * "Vote For public safety, vote Yes on #1" - Those signs (over)

*I had one if you want the exact language
Submitted at meeting 2/11/16

were illegally placed on
the school yards and
the district was "off
work" and * the city
clerk would NOT remove
those illegal (and defacing)
signs [which might have
influenced voters]

Suzanne Ems-Barclay
e/msbarclay1@gmail.com

* I talked to Chris Swope,
at the time, via telephone

2-12-2016

Can we just stop
growing Marijuana
in private homes
in neighborhoods,
EVEN if being grown for
"caregiving," to preclude
tragic murders such
as those in March of 2016.
on Glasgow?

JE